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INSTITUTE FOR DEFENSE ANALYSES

Doctrine, Organizations, and Systems for Reception, Staging, Onward Movement, and Integration (RSOI) Operations

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PREFACE

This report was produced by the Institute for Defense Analyses (IDA) for the Commander in Chief, U.S. Atlantic Command and the Commanding General, U.S. Army Forces Command (FORSCOM) in partial fulfillment of the task "Reception, Staging, Onward Movement, and Integration (RSOI)."

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DOCTRINE, ORGANIZATIONS, AND SYSTEMS FOR RECEPTION, STAGING, ONWARD MOVEMENT, AND INTEGRATION (RSOI) OPERATIONS

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SUMMARY

A. BACKGROUND

Recent changes in world politics, including the dissolution of the Soviet Union and the Warsaw Pact, have lessened the likelihood of global military confrontation. This has resulted in a sizable reduction in U.S. military forces and a significant drawdown in the number of U.S. forces stationed overseas. The U.S. military has evolved very quickly from a forward deployed force prepared to meet the challenges of global warfare, to one that must rely on its capability to project forces to any contingency area. The Chairman of the Joint Chiefs of Staff recently published *Joint Vision 2010*, confirming that the U.S. military is likely to remain largely a force based in the continental United States (CONUS) that must be prepared to meet a wide range of regional challenges.

At the same time, there has been a significant increase in the number of regional contingencies requiring the use of military forces. Table 1 illustrates some of the contingencies in which U.S. forces have been involved in recent years.

In response to this change in posture, substantial U.S. resources have been invested to improve the strategic mobility triad (airlift, sealift, and prepositioning). Programs such as the acquisition of the C-17 airlift aircraft, the acquisition and conversion of 19 Large, Medium-Speed Roll-on/Roll-off (LMSR) vessels, and increases in prepositioned materiel both ashore and afloat will improve the capability to deliver U.S. forces to any contingency area.

Force projection, however, depends also upon the ability to rebuild combat power rapidly and effectively after the deploying material and personnel arrive in the contingency area. Build-up is accomplished by receiving personnel and equipment, reassembling personnel (who normally move by air) with equipment (that normally moves by sea), moving this capability to a location where it can become combat ready, and finally, integrating the capability into a military force capable of accomplishing the assigned mission. These operations, when considered collectively, are referred to as Reception, Staging, Onward Movement, and Integration (RSOI). When performed effectively, RSOI can be a "force multiplier." The faster deploying forces transition from

passengers and cargo into combat ready forces, the sooner they will contribute to the success of the mission.

Table 1. Examples of Contingencies Involving the Deployment of U.S. Forces

Name/Location	Dates	Type	CINC AOR
UNTAG	4/89 - 3/90	Treaty Supervision	EUCOM
Just Cause - Panama	10-89 - 1/90	Foreign Internal Defense	SOUTHCOM
Sharp Edge - Liberia	5/90 - 9/90	NEO	EUCOM
Desert Shield/Storm - SWA	8/90 - 3/91	Repel Aggression - UNSCR 661	CENTCOM
Eastern Exit	1/91	NEO	CENTCOM
JTF Provide Comfort - Turkey	3/91 - Present	Humanitarian Relief - UNSCR 688	EUCOM
Sea Angel I - Bangladesh	5/91 - 6/91	Disaster Relief	PACOM
Various - Caribbean/GTMO	10/91 - 7/93	Refugee Support	ACOM
Provide Hope - CIS	2/92	Humanitarian Assistance	CJCS
Sierra Leone	5/92	NEO	EUCOM
Provide Promise - Balkans	7/92 - 12/95	Humanitarian Assistance-UNSCR 743	EUCOM
Southern Watch - SWA/Iraq	8/92 - Present	Enforce UNSCR 687	CENTCOM
Typhoon Omar - Guam	8/92 - 9/92	Disaster Relief	PACOM
Restore Hope - Somalia	12/92 - 5/93	Peace Enforcement-UNSCR 751	CENTCOM
Provide Refuge - Marshall Islands	1/93	Disaster Relief	PACOM
Deny Flight - Balkans	4/93 - 8/95	Enforce UNSCR 816	EUCOM
Sharp Guard - Balkans	6/93 - 6/96	Enforce UNSCR 820	EUCOM
Able Sentry - Macedonia	7/93 - Present	Enforce UNSCR 795	EUCOM
Restore Democracy - Haiti	9/94 - 4/96	Peace Supervision - UNSCR 940	ACOM
Safe Haven/Distant Haven	9/94-3/95	Refugee Support	SOUTHCOM
Vigilant Warrior	10/94	Deter Aggression	CENTCOM
Joint Endeavor - Balkans	12/95 - Present	Peace Implementation - UNSCR 1035	EUCOM

The largest and most rapid deployment of U.S. forces in this new environment occurred during Operations Desert Shield/Desert Storm, and included U.S. forces both from CONUS and from forward based locations in Europe and the Pacific. Substantial facilities and infrastructure were available to support reception operations during this major regional contingency, and large numbers of personnel and quantities of material were delivered to the contingency area rapidly. However, the lack of joint doctrine, organizations, planning tools, and reporting systems to plan and then execute joint RSOI

operations delayed the reassembly of combat capabilities. Large backlogs at the reception facilities and bottlenecks along the routes contributed to an increased vulnerability for the deploying force.

The substantial investment in the strategic mobility triad has not been matched by concomitant investments to improve the capabilities of the forces to plan and execute RSOI operations. Subsequent experiences during a number of multinational Operations Other Than War (OOTW), such as Operations Provide Comfort, Restore Hope, and more recently Joint Endeavor, have reinforced the joint and combined nature of RSOI operations, but also have highlighted the continuing need to improve the capabilities to plan and conduct joint RSOI operations.

The Chairman of the Joint Chiefs of Staff recently created a Deployment Process Special Action Group (DPSAG) comprised of senior representatives from the Joint Staff and selected combatant commands. The purposes of the DPSAG are: (1) to identify and further define deployment problems and potential corrective actions, (2) to prioritize corrective actions, and (3) to plan and implement corrective actions to improve the deployment process. This group, formed in May 1996, will continue through June 1997, when short term initiatives are expected to be completed and longer term requirements will be incorporated into appropriate Defense Programs.

B. STUDY OBJECTIVES

This study focused on the four essential parts that are needed to plan and conduct RSOI operations: doctrine, organizations, planning tools, and reporting systems. The specific study objectives were as follows:

- To review current joint and Service doctrine related to RSOI operations, and to identify specific areas that need revision or modification.
- To describe the organizations tasked to conduct these RSOI operations, and to recommend how these organizations could be changed to perform these operations more effectively.
- To examine the current set of automated tools available for planning joint and combined RSOI operations, and to identify improvements that could enable combatant commands to plan these operations more effectively.
- To examine current movement reporting systems, both intransit visibility and force tracking systems, and to recommend improvements that could provide combatant commands with information needed to execute effective RSOI operations.

C. STUDY SCOPE

The study team examined current joint, multi-Service, Service, and combined doctrine related to RSOI operations to ensure consistency and to identify gaps in the fundamental principles that guide these operations. It also examined both the prescribed and *ad hoc* organizational structures currently used to perform RSOI operations, including situations where host nation, allied, or contracted support may be employed to accomplish these tasks. Finally, the study team examined both Service- and joint-developed planning tools and reporting systems, the data needed to support initial planning and replanning during execution, and how these systems and organizations might be integrated to improve RSOI capabilities.

D. ISSUES AND RECOMMENDATIONS: DOCTRINE FOR RSOI OPERATIONS

1. Joint Doctrine

Joint doctrine addresses several elements of RSOI operations, but there currently is no document that provides overall guidance for planning and executing these operations. The Mobility Concepts Agency (MCA) is scheduled to release draft Joint Tactics, Techniques and Procedures (JTTP) in April 1997 as Joint Pub 4-01.8, *JTTP for Reception, Staging, Onward Movement and Integration*.

RSOI is only one of many operations that are conducted in the lines of communication (LOC) that link a deployed force with its base of operations, but there is no joint doctrine to guide commanders and staff officers in planning this lifeline.

USACOM, in coordination with the other geographic combatant commands, U.S. Transportation Command (USTRANSCOM), and their components, should recommend to the Joint Staff that a joint publication (possibly a 5-Series pub) be developed to establish doctrine for planning the joint and combined lines of communication through which U.S. military power can be projected to a contingency area.

A deploying force enters the theater LOC at joint air or water terminals. These locations also are the point of interface between USTRANSCOM and the supported combatant command. Policies and procedures for operating joint air terminals currently are contained in a number of joint and multi-Service publications, and Command Arrangement Agreements (CAAs). This doctrine should be consolidated in a single joint publication that establishes a commander for all U.S. activities that occur within the

entire reception complex, the command and control relationships among all organizations operating in or transiting the complex, and the procedures for receiving and sustaining joint forces and conducting retrograde and redeployment operations.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their components, should recommend to the Joint Staff that a single joint publication be developed to specify U.S. doctrine when establishing a Joint Aerial Port Complex at a host nation airfield to conduct reception, sustainment, retrograde, and redeployment of joint forces both during peacetime operations and during contingency deployments.

Although a JTTP currently addresses joint water terminal operations, the publication does not take into account the other interrelated activities that occur within the reception complex or the concept of operations for the terminal contained in a recent Memorandum of Agreement between the Commander of the Military Traffic Management Command and the U.S. Army Chief of Transportation.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their components, should recommend to the Joint Staff that the current version of Joint Pub 4-01.5 be revised to incorporate other operations within the Joint Water Port Complex, and establish the U.S. command and control arrangements for various contingency options.

2. Multi-Service Doctrine

As joint doctrine continues to be developed and refined, the need for multi-Service doctrine should be evaluated.

3. Service Doctrine - U.S. Army

The Department of the Army describes the force projection process in their series of Field Manuals (FM). They currently are developing FM 100-17-3 *Reception, Staging, Onward Movement and Integration*. This draft currently is being staffed with the Army major commands (MACOMs).

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and the Army components, should evaluate emerging Army RSOI doctrine during command post and field training exercises and provide recommendations for improving these publications. Common joint terminology should be used for Army doctrine whenever possible.

4. Service Doctrine – U.S. Navy

Naval Doctrine Publication (NDP) 4, *Logistics*, highlights several important points related to RSOI operations; however, it does not describe how deploying naval forces will undergo the RSOI process. Although most of the deploying naval forces will be afloat and will only undergo integration, naval doctrine should provide guidance on RSOI operations for units that transit or deploy to shore-based facilities.

USACOM, in coordination with the other geographic combatant commands and their Navy components, should recommend to the Department of the Navy that Naval doctrine include RSOI operations for units that deploy to shore-based facilities located in their areas of responsibility (AORs) and for those elements that require movement from these shore-based facilities to the forces afloat.

5. Service Doctrine – U.S. Air Force

A significant number of Air Force doctrinal and procedural publications reviewed for this study address some aspects of the RSOI process, but there is little guidance relating to how deploying Air Force units will conduct RSOI operations. While most of the Air Force units deploy directly to the location from which they will operate and will only undergo the reception and integration processes during RSOI operations, other Air Force elements (RED HORSE, weather, tactical air control parties, communications, etc.) will complete the entire RSOI process.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their Air components, should recommend that doctrinal publications or instructions be developed by the Air Force to establish RSOI procedures for deploying its units and non-unit personnel and materiel into a supported combatant command's AOR.

6. Service Doctrine – U.S. Marine Corps

When making a forced entry, the Marine force is tactically configured and would not initiate RSOI operations until conditions allowed. In other situations, some Marine forces deploy to draw equipment from the Maritime Prepositioning Ships and these forces will undergo the RSOI process. FMFM 1-5, *Maritime Prepositioning Force (MPF) Operations*, addresses responsibilities and organizational structure for MPF operations, but it does not specifically address RSOI operations. Marine Corps force structure does contain organizations capable of performing limited RSOI functions for deploying Marine forces.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their Marine components, should recommend that the Marine Corps Doctrine Command review its existing deployment doctrine as joint doctrine emerges, and clarify the actions and responsibilities for planning, coordinating, and executing Marine Corps RSOI operations within the supported command's AOR.

7. Combined Doctrine

Some recent contingency operations (shown in Table 1) have been combined operations involving not only allied military organizations, but often civilian organizations from International Organizations (IOs), Non-Governmental Organizations (NGOs), and Private Volunteer Organizations (PVOs).

Joint and Service RSOI doctrine must include principles and procedures for conducting deployment operations in combined as well as in joint environments, including situations where non-military organizations (IOs, NGOs, and PVOs) also participate in the contingency.

Three North Atlantic Treaty Organization (NATO) documents contain policy and guidance related to RSOI operations in a combined environment. These documents are MC-317, *NATO Force Structures for the Mid 1990s and Beyond*; MC-319, *NATO Principles and Policies for Logistics*; and MC-336, *A Movement, Transportation, and Mobility Management Concept for NATO*. There are also several Allied Tactical and Logistics Publications (ATPs and ALPs) to guide joint and combined military operations. These include STANAG 2406 - ALP-9, *NATO Land Forces Logistic Doctrine* and ALP-12, *Guidance for Planning and Preparation of Host Nation Support Agreements/Arrangements*. In addition, a series of NATO Standardization Agreements provides specific guidance for RSOI actions.

Joint and Service RSOI doctrine should incorporate doctrine and procedures already agreed to in STANAGs and other NATO documents to ensure U.S. personnel are aware of their content and to facilitate cooperation during operations involving NATO member and partner forces.

Another standing combined organization in which the U.S. participates is the American, British, Canadian, and Australian (ABCA) Armies Standardization Program. This organization is currently working on a Quadripartite Standardization Agreement (QSTAG) for reception of ABCA forces into a theater of operations, scheduled for release by the summer of 1998, and it is expected to address combined RSOI operations.

E. ISSUES AND RECOMMENDATIONS: JOINT RSOI TERMINOLOGY

Although many terms related to the deployment process are contained in Joint Pub 1-02, *Department of Defense Dictionary of Military and Associated Terms*, several terms and concepts employed in joint RSOI operations lack agreed upon standard definitions. In some cases, terms or concepts vary from Service to Service, while in other cases a term may not be standardized within a single Service. Chapter II provides an integrated framework for terminology that could be adapted to ensure all commands and staffs use standardized, approved terminology for planning and conducting joint RSOI operations.

USACOM should propose to the Deployment Process Special Action Group that the terms set forth in this report be reviewed by the combatant commands, components, Services, and Defense agencies. When this review is completed, agreed upon changes should be included in Joint Pub 1-02.

F. ISSUES AND RECOMMENDATIONS: ORGANIZATION OF THE JOINT AND COMBINED LOC

Title 10, U.S. Code (10 USC) grants combatant commanders authoritative direction over all aspects of military operations, joint training, and logistics within their AOR. Supporting joint doctrine authorizes combatant commanders to establish both component and functional commands as required, and to take measures to prevent or eliminate unnecessary duplication of facilities and overlapping of functions among the Service components. Joint Pub 4-0 also calls for a "single command authority to be responsible for logistics" within a combatant commander's AOR.

There currently is no single organization responsible for planning and operating the theater LOC and conducting joint RSOI operations in the AORs of the combatant commands. These functions typically are performed by *ad hoc* task-organized elements that lack training and equipment to perform these tasks. Because there is no joint functional organization responsible for planning and operating the theater LOC, these tasks normally have been accomplished under the "dominant user" concept. The Army component, usually the largest element of the joint contingency force, is assigned many common user RSOI support tasks, and these are normally handled by a Theater Army Area Command (TAACOM). The U.S. Army Training and Doctrine Command has developed a Theater Support Command (TSC) concept to consolidate many of the functions of the TAACOM and other separately reporting functional Army commands.

The TSC remains a subordinate command of the Army Component Command, and under this concept would provide engineering, transportation, medical, personnel and finance support to Army forces on a theater-wide basis.

While this concept would be effective from an Army perspective, it does little to eliminate the overlapping of functions among Service components. The supported combatant commander requires a joint functional command to accomplish the following tasks:

- Oversee the joint planning and operation of the theater LOC
- Coordinate U.S. joint support requirements with the host nations
- Conduct joint RSOI operations
- Sustain the joint force
- Protect the joint rear area
- Manage all retrograde personnel and materiel while in the theater
- Redeploy the joint force when the mission has been completed.

A proposed Joint Theater Support Command (JTSC) would include the functions of the TSC concept, but also would consolidate communications, materiel, and infrastructure under a single joint functional command. The JTSC would function as the Joint Rear Area Coordinator (JRAC). The JTSC should be structured in peacetime to accommodate situations in which combatant command forces are either forward stationed or CONUS-based, and during contingencies the JTSC should tailor and time-phase the deployment of its joint resources to ensure that only the minimum essential elements needed to perform the tasks identified above are deployed to the contingency area.

USACOM, in coordination with the combatant commands and components, should evaluate the proposed organizational concepts for improving joint RSOI, sustainment, and retrograde operations during Unified Endeavor or other exercises to determine their effectiveness; if warranted, USACOM should propose to the Joint Staff that the most effective option be incorporated into joint doctrine and geographic combatant command organizations.

To ensure unity of effort, the organizations that operate the theater LOC nodes should be subordinate to the JTSC. The two principal reception nodes, the Joint Aerial Port Complex and Joint Water Port Complex, are critical end points of the theater LOC, and U.S. organizations that operate them should be controlled by a joint commander.

USACOM, in coordination with the combatant commands and components, should evaluate the proposed Joint Water Port Command and Joint Aerial Port Command organizational concepts during Unified Endeavor or other exercises to determine their effectiveness; if warranted, USACOM should propose to the Joint Staff that they be incorporated into joint doctrine and geographic combatant command organizations.

The task organized elements from all Service components that operate other supporting nodes of the theater LOC should be identified and organized on an area basis to meet the specific requirements of the geographic combatant commands. The infrastructure organization of the proposed JTSC would provide joint oversight for these organizations in peacetime and plan for their joint use during contingency operations. These elements also will require training to ensure they can perform the RSOI tasks.

USACOM, in coordination with the other combatant commands and components, should develop a Joint Theater LOC Planning Handbook containing guidance for establishing, sizing, and structuring task forces required to operate nodes that support joint RSOI operations. As the joint force provider, USACOM should ensure these task forces are equipped and trained to perform these missions.

USACOM, the other combatant commands, and their components, should identify the units that will be tasked to perform node operations during deployment, add the standard node operation task to the mission essential task lists of these units, and integrate the standard tasks and node operating organizations into deployment command post and field training exercises.

The transportation organization of the proposed JTSC would exercise joint command and control over the mode operators assigned to the combatant command.

USACOM, in coordination with the other combatant commands and their components, should identify the component command and control and task unit organizations and capabilities to perform common-user mode operations and include them in the proposed Joint Theater LOC Planning Handbook.

Movement control of U.S. resources in the theater LOC is the responsibility of the supported combatant commander. Doctrinally, this function is to be coordinated by the Joint Movement Center (JMC), but it typically is an *ad hoc* organization created at the initiation of a contingency. Movement control usually is delegated to a component command, under the "most capable Service" concept. The purpose of the JMC, when activated, is coordination and traffic management accomplished through establishment of policies. To ensure that the combatant commander's movement priorities are executed effectively, a Joint Movement Control Agency (JMCA) should be established. The

proposed JMCA would be a jointly manned organization bringing together into a single organization all of the Service agencies, centers, teams, cells, and offices that have a movement control role in the joint rear area under a single joint commander.

USACOM, in coordination with the combatant commands and their components, should evaluate the proposed JMCA organizational and movement control architecture concepts during Unified Endeavor or other exercises to determine their effectiveness; if warranted, USACOM should propose to the Joint Staff that these concepts be incorporated into joint doctrine and geographic combatant command organizations.

G. ISSUES AND RECOMMENDATIONS: AUTOMATED RSOI PLANNING AND EXECUTION SUPPORT SYSTEMS AND SUPPORTING DATA

There are a number of automated planning and support tools currently available to assist commanders and staffs with deployment planning and operations. The Joint Operation Planning and Execution System (JOPES) is the U.S. system for deployment planning and execution. Another automated system which supports TPFDD development is the Analysis of Mobility Platform (AMP), which includes the Dynamic Analysis and Replanning Tool (DART), and the Joint Flow and Analysis System for Transportation (JFAST).

There are considerable variations in terminology, operational concepts, organizational arrangements, and data requirements for planning and operating a theater LOC. Because standards are lacking, there currently are no manual or automated tools developed to assist staff planners as they develop a theater LOC to support U.S. forces. A Joint Theater LOC Planning Handbook should be developed to standardize terminology, to establish a comprehensive planning process, and to identify the desired physical characteristics of theater LOC nodes and the types of data that are required to support these planning efforts. This handbook could serve as basis for developing automated support tools and for training staff officers

USACOM, in coordination with the combatant commands and components, should develop a Joint Theater LOC Planning Handbook containing guidance and procedures for planning the nodes and links of a theater LOC to accommodate contingency deployment and sustainment operations, and coordinating these requirements with host nations and other allies.

USACOM should incorporate the proposed Joint Theater LOC Planning Handbook into the Unified Endeavor exercise series to train staffs and propose that it be incorporated into the curricula of the Armed Forces Staff College and appropriate Service schools to educate future staff

officers on the importance of and methods to be used for planning theater LOCs during contingencies.

There are other automated systems that could assist planners with developing a theater LOC. One system is the Knowledge Based Logistics Planning Shell (KBLPS) which is part of the Logistics Anchor Desk (LAD). This Army system assists logisticians with planning the allocation and transportation of Army support at the corps level. KBLPS, or a KBLPS-like system, may have utility as an automated LOC planning tool.

USTRANSCOM should develop and incorporate into AMP an automated LOC planning tool based on the proposed Joint Theater LOC Planning Handbook and KBLPS concept to facilitate rapid contingency planning.

Two other automated tools which can help to analyze the capabilities of the theater LOC are the Enhanced Logistics Intratheater Support Tool (ELIST) and the Scenario Unrestricted Mobility Model for Intratheater Simulation (SUMMITS). ELIST is an analytical tool that simulates, from a transportation perspective, the deployment of forces through the theater LOC. Although ELIST may be a useful tool in assessing the feasibility of a proposed deployment through a user-specified theater LOC, it has several limitations that restrict its use during RSOI planning.

USTRANSCOM should enhance the capabilities of ELIST to incorporate accurately the RSOI, sustainment, and retrograde operations that occur within the theater LOC.

Once ELIST has been modified, it should be able to assist theater planners with evaluating the capability of the theater LOC to conduct RSOI, sustainment, and retrograde operations.

USACOM should incorporate the enhanced ELIST into the Unified Endeavor exercise series and propose that it be incorporated into the curricula of the Armed Forces Staff College and appropriate Service schools to ensure future staffs are trained to employ the enhanced tool during deployment planning and execution.

SUMMITS simulates the movement of personnel, unit equipment, and supplies in accordance with defined requirements through a predetermined theater LOC. It also has the capability to assess the feasibility of an established, or planned, theater LOC; however, it is a very detailed and complex system to operate, and is not as user friendly as ELIST.

Planning and executing U.S. military deployments is supported by JOPES, but this system has significant limitations that impact on joint RSOI operations. It does not

contain a sufficient level of detail to represent the flows that will occur in the theater LOC. A more detailed theater TPFDD could provide the supported combatant command with the information it needs to plan and control the execution of RSOI, sustainment, and retrograde operations which simultaneously compete for resources within the theater LOC.

The Joint Staff, in coordination with the geographic combatant commands and USTRANSCOM, should evaluate the utility of the theater TPFDD concept, and if warranted, establish the requirement and develop the systems to provide the capability.

There are a few automated tools to assist with node planning and operation. The Base Resource and Capability Estimator (BRACE) can be used to model military air terminal operations by estimating the cargo that can be processed into and out of an airfield taking into account the physical characteristics of the facility and the operational capability of the air terminal operators. This Air Mobility Command system does not, however, address the movement of RSOI workloads through any of the supporting nodes within the Joint Aerial Port Complex. The BRACE capability should be extended to include all RSOI, sustainment, and retrograde operations that will occur within the complex.

USTRANSCOM should extend the capabilities of BRACE to include all RSOI, sustainment, and retrograde operations that occur within a Joint Aerial Port Complex, and connect BRACE with ELIST to provide an integrated simulation capability for theater LOC requirements.

The Port Simulation (PORTSIM), a Military Traffic Management Command model, simulates activities within a water terminal. PORTSIM, like BRACE, is currently limited to simulating only terminal operations.

USTRANSCOM should extend the capabilities of PORTSIM to include all RSOI, sustainment, and retrograde operations that occur within a Joint Water Port Complex, and connect PORTSIM with ELIST to provide an integrated simulation capability for theater LOC requirements.

There are currently no manual or automated tools to assist staffs with planning the other types of nodes that are likely to be found in the theater LOC. It may be necessary to develop automated tools that simulate the activities that occur within these nodes so their impact on the deployment process can be understood and quantified.

USTRANSCOM, in coordination with the combatant commands, should investigate the need for developing automated tools within AMP that can simulate activities at other nodes of the theater LOC. USTRANSCOM

should develop those tools for which there is an identified requirement, and establish the interface between these tools and ELIST.

There also is a combined forces planning and execution tool to assist with theater LOC and RSOI operations. The Allied Command Europe (ACE) Deployment and Movement System (ADAMS) is a developmental system intended to fulfill the requirements for a joint and combined movement coordination system within NATO.

Theater-specific data are needed to identify the possible configurations of the theater LOC nodes and links, and the organizations to operate the LOC. Some of this data includes:

- Which nodes already exist in the theater of operations, and what are the maximum capabilities of the facilities at each of these nodes to support joint RSOI, sustainment, and retrograde operations
- Which nodes do not exist and must be established during the deployment.
- Which host nation facilities might be used as nodes and what are their potential capacities.
- What are the essential and desired characteristics of each node to support the deployment concept.

Although JOPES contains some port and airfield data, the data required to produce this type of information for the theater LOC have not been clearly defined and there is currently no agency designated to develop and manage a data collection plan. A single agency should be designated to ensure these data are defined, collected, maintained current, processed into needed information, and made available to combatant commands and their component when required.

USTRANSCOM should establish a transportation planning information network to satisfy the requirements of the supported combatant commands.

A variety of factors can necessitate revisions to plans after deployment operations have started. To adjust RSOI flows, the combatant commander and his staff must be able to see what has already occurred and to predict what is likely to occur in the near future. The source of timely and accurate execution information is the Global Transportation Network (GTN), under development by USTRANSCOM. To date, the GTN extends only to the joint air and water terminals within the theater. Future versions of the system are intended to extend beyond these locations to other nodes in the theater LOC. Because

GTN does not currently interface with ELIST, it has only limited utility for replanning during deployment execution.

USTRANSCOM should develop procedures to interface the enhanced ELIST with appropriate GTN systems to provide a real-time RSOI replanning capability during deployment execution.

H. ISSUES AND RECOMMENDATIONS: RSOI REPORTING SYSTEMS AND SUPPORTING DATA

A number of automated systems provide commanders and staffs with information needed to monitor the RSOI, sustainment, and retrograde operations. USTRANSCOM's GTN is the keystone of this system architecture that is intended to provide integrated and automated support for planning and executing common-user intertheater and theater air, ground, and sea transportation, as well as terminal services that deploy and sustain the force. There also are a number of Service-unique reporting systems that collect and maintain information about various portions of joint RSOI, sustainment, and retrograde operations. Some systems exist now, while some are being developed or redesigned.

The Consolidated Aerial Port Subsystem II (CAPS II) is an Air Force system used at air terminals to track the movement of passengers and cargo. The Cargo Movement Operations System (CMOS) is another Air Force system used to track the movement of Air Force personnel and materiel. CMOS is designed to support the deployment of Air Force units and their accompanying materiel by airlift from their home stations to the contingency air terminal.

The TRANSCOM Regulating and Command and Control Evacuation System (TRAC²ES) is an Air Force system used to manage and track the flow of patients from a theater of operations. TRAC²ES integrates bed, lift, and patient data as well as projected flight schedules to develop a patient movement plan.

The Department of the Army Movement Management System-Redesign (DAMMS-R) supports surface movements management, transportation operations, and the allocation of transportation resources within a theater of operations. Although DAMMS-R does interface with a number of systems, including GTN, it still has a number of shortfalls that make it unable to collect and process joint RSOI, sustainment, and retrograde movement data.

An improved system that will include many of the DAMMS-R capabilities is currently being developed. The Transportation Coordinator's Automated Information

Management System (TC-AIMS II), is being developed by the Army, with the Marine Corps leading the definition of system requirements.

The Worldwide Port System (WPS), which is part of the GTN, is used during contingency deployments to provide real-time cargo terminal operations and cargo documentation capability to the terminal commander. It supports automated cargo accounting, documentation, manifesting, and other related water terminal operations.

Although the systems described above provide significant capabilities to track the movement of personnel and materiel, or to manage air or water terminals, they were developed by individual Services based on individual Service requirements. These systems may provide some information related to joint RSOI, sustainment, or retrograde operations, but a single system needs to be developed that will provide accurate intransit visibility and force tracking for the joint force.

USACOM, in coordination with the other combatant commands and their components, should actively support the Army's development of TC-AIMS II to meet the urgent requirement to provide ITV and force tracking beyond the theater air and water terminals.

Currently, only one system has been developed to track deploying force movement in a theater of operations, the Standard Theater Army Command and Control System (STACCS). Although this system has been used during exercises and some deployment operations, its effectiveness is limited because of the following:

- The system is classified SECRET.
- It has only been employed in EUCOM's AOR.
- It is an Army-only system.
- The system does not allow for enroute adjustments.
- It tracks only surface movements and provides no visibility on air movements.

As TC-AIMS II continues development, it should incorporate the essential features of several systems including DAMMS-R and STACCS.

USACOM, in coordination with the other combatant commands and their components, should actively participate in the requirements definition for the TC-AIMS II program to ensure it produces the data collection, reporting, and processing capabilities needed to exercise control over joint RSOI, sustainment, retrograde, and redeployment operations within the command's AOR.

A movement control architecture – a geographically dispersed, integrated network of movement control units with reporting capabilities – is an essential foundation that must be established within the theater LOC if movement control, intransit visibility, and force tracking are to be accomplished successfully. This architecture must be established using standard units authorized in the Service component force structures, not based on *ad hoc* task forces. These movement control units should be identified by the geographic combatant commands and their components so that the Services can train and equip them to perform their contingency movement control mission.

USACOM, in coordination with the other geographic combatant commands and their components, should identify the Service movement control units to be employed to establish the theater LOC movement control architecture.

USACOM, in coordination with the other geographic combatant commands and their components, should identify the communications capabilities required by the units of the movement control architecture to enable them to exchange data during contingency deployments through the various theater LOCs. USACOM should recommend to the appropriate Service that the required communications capabilities be fielded on a priority basis.

Movements and status of units and forces should be reported from all nodes where RSOI operations are conducted. Key locations include arrival air and water terminals, marshaling areas, staging areas, tactical assembly areas, and locations where forces and sustainment cross international borders.

USACOM, in coordination with the other geographic combatant commands and their components, should include guidance for planning and establishing the theater movement control architecture in the proposed Joint Theater LOC Planning Guide. This guidance should be used to establish training standards for these movement control units.

Timely and accurate force tracking and intransit visibility information should facilitate the rapid reassembly of combat capability within the theater. The combatant commands and their components need to determine specifically which data they require, the data formats, the frequency of data reporting, and the reporting structure for that data.

USACOM, in coordination with the other geographic combatant commands and their components, should develop readiness display formats for combat, combat support, and combat service support units that will deploy during contingency operations, and provide these display formats to the TC-AIMS II developer so they can be incorporated into the system design.

The combatant commands also should make their data requirements known to the system developers.

The Program Manager for TC-AIMS II should require active participation of the geographic combatant commands and their components during requirements definition and system development to ensure the system will provide the data collection, reporting, processing capabilities, and the information displays needed by them during contingency deployments.

I. ORGANIZATION OF REPORT

This paper contains five chapters and three appendices. Chapter I presents an analysis of existing joint, multi-Service, Service, and combined doctrine pertaining to joint RSOI operations, and recommends specific improvements. Chapter II establishes a lexicon of terms to serve as a consistent framework upon which to build joint doctrine and a common understanding of joint RSOI operations. Chapter III describes the need for unity of effort and tailored support forces to operate the theater LOC, and proposes a joint organizational structure to focus the efforts of the node and mode operators, and the movement controllers. Chapter IV describes the automated planning and support tools that are currently available (or under development), and proposes improvements so that joint RSOI operations can be planned rapidly and executed effectively during future contingencies. The final chapter establishes the need for timely and accurate report during deployment execution, describes currently available and developmental reporting systems, and proposes a movement control architecture of systems and units to collect and process data, and to provide commanders and staff with essential intransit visibility and force tracking information.

CHAPTER I

JOINT, SERVICE, AND COMBINED RSOI DOCTRINE

I. JOINT, SERVICE, AND COMBINED RSOI DOCTRINE

Military doctrine is important because it articulates “the fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives.”¹ Doctrine is the foundation upon which military leaders are trained and organizations are designed and employed. While military doctrine is authoritative, it also requires judgment in application to accommodate variations in the specific conditions under which the forces must operate.

There are four levels of military doctrine. Each of the Services publishes its own doctrine to guide the actions of its commanders and units – **Service Doctrine**. When two or more Services must employ forces in coordinated action, **multi-Service Doctrine** is developed and ratified by the participating Services. **Joint Doctrine** is published by the Chairman of the Joint Chiefs of Staff to coordinate the actions of two or more Services to achieve a common objective. Joint doctrine is more broadly based than multi-Service Doctrine because it also is coordinated with the combatant commands, each of the Services, and the Joint Staff. When the actions of the forces of two or more nations must be coordinated to achieve a common objective, these principles are outlined in **Combined Doctrine** which is ratified by the participating nations.

This chapter provides a brief overview of the actions inherent in Reception, Staging, Onward Movement, and Integration (RSOI) operations; a more detailed description is provided in the terminology chapter that follows. It then describes the existing Service, multi-Service, Joint, and Combined Doctrines related to the RSOI operations and identifies areas needing improvement. This chapter also makes specific recommendations to improve RSOI doctrine.

A. THE RSOI PROCESSES

The reception, staging, onward movement and integration processes involve military actions when force capabilities are projected into a geographic area. Usually, U.S. military capabilities are deployed by the National Command Authorities (NCA) to

¹ Joint Publication 1-02, *Department of Defense Dictionary of Military and Associated Terms*.

carry out the national security strategy in areas outside of the continental United States (OCONUS), in areas of responsibility (AORs) assigned to the one of the five geographic combatant commands. These deployments may respond to emergency situations such as providing humanitarian assistance to victims of natural or man-made disasters or to a wide range of operations up to and including war.

1. The Lines of Communication

Deployment is an operation that relocates forces and materiel into a designated AOR. The deployment occurs through lines of communication (LOC) that connect the contingency area with the operating base and the LOCs serve as the foundation upon which force relocation, sustainment, retrograde movement, and redeployment occurs. The entire LOC, from peacetime origin to contingency final destination, must be planned with adequate facilities and manned with sufficient capacity to handle the projected workloads in accordance with the requirements of the supported combatant command.

The portion of the LOC within the continental United States (CONUS) – between unit home stations and ports of embarkation – is well known, planned, and exercised. The strategic portion of the LOC linking the ports of embarkation to the ports of debarkation is subject to variation caused by contingency requirements and the availability of facilities in or near the contingency area. The facilities within the AOR are usually assets of a host nation, and U.S. use of them must be coordinated in advance with the appropriate authorities.

The length and composition of the theater portion of the LOC varies with the requirements of the contingency and the infrastructure available within the contingency area. Table I-1 summarizes the variations in theater LOCs for a number of planned or recently conducted contingencies. The lengths of these theater LOCs vary significantly, as do the numbers and types of nodes included within the theater LOC. The theater portion also is typically the most restrictive segment of the LOC and the one that will impose the greatest restriction on the flow to the final destination. Unless the required flows through the LOC are balanced with the capacity to process the workloads, particularly within the theater portion, congestion is likely to occur, increasing the vulnerabilities of deploying U.S. personnel and large volumes of materiel arriving in the theater.

Table I-1. Variations in Theater Lines of Communication

LOC Nodes	MRC-E	MRC-W	LRC-TU	Haiti	Rwanda	Somalia	Bosnia
Reception Nodes							
• Aerial Ports of Debarkation	12	6	4	2	4	2	2
• Main Operating Bases	n/a	2	17	n/a	n/a	n/a	0
• Collocated Operating Bases	18	9	6	n/a	n/a	n/a	0
• Contingency Operating Locations	n/a	8	n/a	n/a	n/a	9	0
• Sea-to-Air Interface Airfields	n/a	1	3	n/a	n/a	2	0
• Sea Ports of Debarkation	2	3	3	1	1	3	0
• Advanced Logistics Support Bases	1	1	n/a	1	n/a	n/a	n/a
Tactical Areas							
• Intermediate Staging Bases	n/a	1	n/a	1	n/a	n/a	1
• Marshaling Areas	2	3	3	n/a	n/a	n/a	2
• Staging Areas	7	9	3	n/a	n/a	n/a	1
• Tactical Assembly Areas	7	6	6	n/a	n/a	n/a	1
Storage Nodes				1	4	2	?
• War Reserve Stock Sites	12	45	1	n/a	n/a	n/a	n/a
Length of Theater LOC (km)	500	400	850	280*	1,200	1,200	750
Allied Involvement	Coalition	UN	NATO	UN	Coalition	UN	NATO
Host Nation Support	Extensive	Extensive	Extensive	Minimal	None	None	Some

Legend: *From Great Inagua Intermediate Staging Base to Port-au-Prince

MRC-E=Major Regional Contingency East

MRC-W=Major Regional Contingency West

LRC-TU=Lessor Regional Contingency Turkey

n/a=Not applicable for the Contingency

2. Force Deployment

When a military unit (other than a naval force or unit) deploys from its peacetime origin to an operational area, the personnel and materiel of the unit normally will deploy as separate increments using one or more modes of transport. During strategic deployments to the AOR, for example, most personnel will be transported by air while most materiel will be moved by sea. During operational deployments to a contingency area located within the same theater as the stationed forces, units often deploy by various combinations of unit convoys, self-deploying aircraft, commercial buses, trucks, rail, barges, or intracoastal shipping. In the special case of forced entry, the combat elements will seize airheads or beachheads from hostile forces, and when conditions permit, will receive reinforcements and sustainment to secure and extend control over objectives within the contingency area.

3. Reassembly of Combat Capabilities

When units deploy as increments, the commander retains command, but his ability to control the dispersed elements of the unit depends on the movement control system to manage the flows into the contingency area. Some RSOI processes are those essential steps needed to reassemble the incrementally deployed military capability

rapidly, effectively, and efficiently so that the resources can be employed in a timely manner by the supported combatant command to accomplish its mission. The reassembly of combat capabilities is an operational task, but one that relies extensively on logistic capabilities for its success.

The RSOI actions occur at the terminating end of the deployment operation using host nation infrastructure, facilities, and support when available. The logistical capabilities needed to operate the U.S. portion of the theater LOC, so that RSOI and other operations performed within the LOC can be accomplished, must be planned by the supported combatant command, in coordination with other supporting combatant commands, almost always in coordination with the host nation, and often with other allied forces and organizations participating in the operation.

The *reception* of forces and materiel is the first RSOI process accomplished by the U.S. theater LOC operators as the separately arriving increments of personnel and materiel are unloaded from the transportation modes that brought them to the contingency area. The arriving increments of the deploying force require life support until units can be reassembled and made self-sufficient, and the theater LOC elements must be sustained and have sufficient resources to accomplish their tasks. Personnel of deploying units must be joined with their equipment and then moved to areas where units can take necessary actions (e.g., recalibrating weapons, task organizing, and replenishing stocks) to prepare for assigned missions within the contingency area. These are actions included in *staging*, the second RSOI process. While staging is being accomplished, units also must be sustained.

When units have reassembled, the commander has reestablished control over all increments of his unit, and the unit is ready to perform its mission essential tasks, it will require *onward movement* through the theater LOC to its designated destination, the third RSOI process. Logistic elements deployed to perform RSOI actions arrange common-user transportation support, if needed, and coordinate movement clearances for the unit along the theater LOC in accordance with the priorities established by the supported combatant commander.

The RSOI actions terminate when units are *integrated* into the combatant command, the final RSOI process. Integration occurs when transfer of authority of the unit passes from the commander of the supported combatant command to a subordinate functional or component commander (or in some cases an allied commander). When the combatant command completes its mission, the RSOI process begins again, but in

reverse, to accomplish the redeployment of the force from the theater to its origin or to another theater if required.

4. Other Workloads and Tasks

At the same time the RSOI actions are being carried out to reassemble the deploying military capabilities, sustainment for the entire force is another competing workload that must be processed by the logistical elements assigned to operate the U.S. portion of the theater LOC. Concurrent with the RSOI and sustainment workloads, the theater LOC also is likely to have a retrograde flow of personnel and materiel from the theater. These personnel flows require life support while in the AOR and, along with the retrograde materiel, must be moved through the theater LOC and evacuated on returning transportation.

Rear area security is an operational task, and one that the logistical elements operating the U.S. portion of the theater LOC must perform. The rear area security requirements include not only protection of the increments of deploying units undergoing RSOI, but also the non-unit sustaining personnel and materiel and retrograde flows.

B. JOINT RSOI DOCTRINE

The DoD Reorganization Act of 1986 (commonly referred to as the Goldwater-Nichols Act) significantly strengthened the authority of the combatant commanders and underscored the concept of *joint operations*. Goldwater-Nichols also made the Chairman of the Joint Chiefs of Staff responsible for "developing doctrine for the joint employment of the armed forces." Prior to this, there was no single agency responsible for joint doctrine, and therefore no agency responsible for assessing the "completeness" of joint doctrine.² Since then, there has been a steady increase in the development of joint doctrine, but many gaps still remain. Joint doctrine will continue to be developed to fill these gaps to ensure that combatant commanders can utilize the forces assigned to them more effectively and efficiently.

1. Current Joint Doctrine Related to RSOI

Figure I-1 shows the current organization and status of joint publications. Publications relating to joint RSOI functions are found primarily within the "4 Series"

² Joint Pub 1-01.1, *Compendium of Joint Publications*.

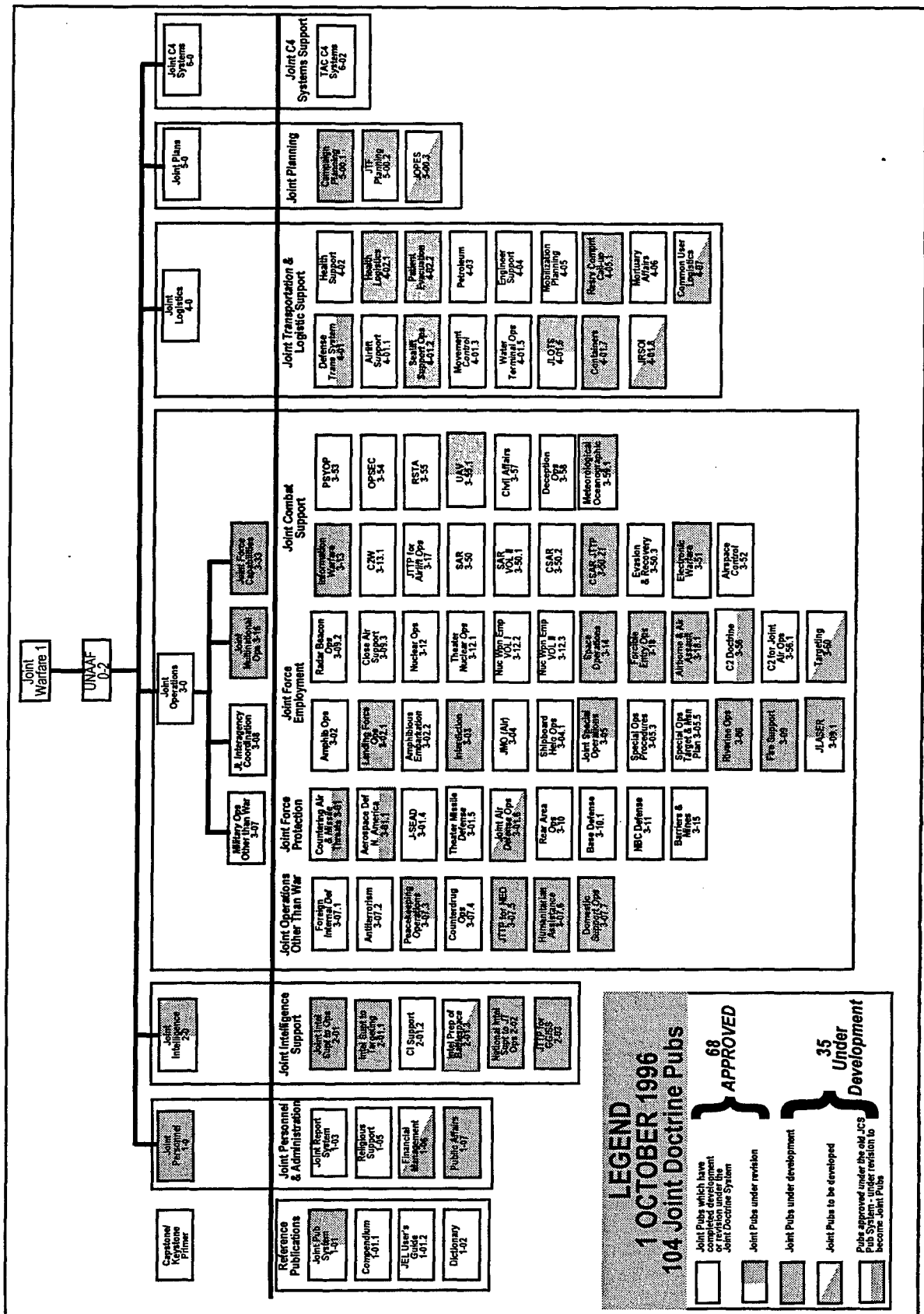


Figure I-1. Joint Doctrine Hierarchy and Status

publications (Logistics), beginning with Joint Pub 4-0, *Doctrine for Logistic Support of Joint Operations*.

The Joint Staff and combatant commands recognized the need for overarching joint RSOI doctrine, and in April 1996 the Director of the Joint Staff tasked the Department of the Army to develop joint doctrine for RSOI. The Mobility Concepts Agency (MCA) currently is writing a Joint Tactics, Techniques and Procedures (JTTP)³ publication for RSOI. A draft of this publication is scheduled to be released in April 1997 as Joint Pub 4-01.8, *JTTP for Reception, Staging, Onward Movement and Integration*.

The Institute for Defense Analyses (IDA) published a study in December 1996 titled *Recommendations for Improving Joint Reception, Staging, Onward Movement and Integration*.⁴ This study, prepared for the Joint Staff, Director for Logistics (J-4), was completed as a product of the Intratheater Lift Analysis (ILA), and recommends specific areas to be addressed by joint RSOI doctrine.

2. Joint Lines of Communications

The LOC connects the deployed force with its base of operations, and is an essential lifeline for a military establishment that projects its power to an overseas area. Joint RSOI operations, however, are only one of many operations that occur along the LOC. The force also must be sustained and retrograde personnel and materiel will be moved through the LOC. Finally, when the operation is completed, the force and any residual materiel not remaining forward deployed, either will be returned to home stations or redeployed to another contingency area. A number of separate joint publications listed below establish doctrine for planning and executing these flows, but there is no publication that describes how they should be planned and managed when simultaneous operations occur within the LOC during a contingency.

LOC Flows

- Joint Pub 3-07.5 *JTTP for Noncombatant Evacuation Operations*
- Joint Pub 4-01.8 *JTTP for Reception, Staging, Onward Movement, and Integration (not yet published)*

³ JTTPs are defined as the actions and methods which implement joint doctrine and describe how forces will be employed in joint operations. They are promulgated by the Chairman of the Joint Chiefs of Staff, in coordination with the combatant commands, Services, and Joint Staff.

⁴ IDA Document D-1910.

- Joint Pub 4-02.2 *JTTP for Patient Evacuation in Joint Operations*
- Joint Pub 4-03 *Joint Bulk Petroleum Doctrine*
- Joint Pub 4-06 *JTTP for Mortuary Affairs in Joint Operations*

Similarly, a number of additional joint publications listed below separately describe the operations of various parts of the LOC such as airlift, sealift, and movement control. Other publications describe operations at specific nodes of the LOC, such as a water terminal or when joint logistics over the shore operations are conducted. Additionally, Joint Pub 3-10 establishes doctrine for security of U.S. resources operating in the Joint Rear Area.

LOC Operations

- Joint Pub 3-17 *JTTP for Theater Airlift Operations*
- Joint Pub 4-01.1 *JTTP for Airlift Support to Joint Operations*
- Joint Pub 4-01.2 *JTTP for Sealift Support to Joint Operations*
(published in draft)
- Joint Pub 4-01.3 *JTTP for Movement Control*
- Joint Pub 4-01.5 *JTTP for Water Terminal Operations*
- Joint Pub 4-01.6 *JTTP for Joint Logistics Over the Shore (JLOTS)*

LOC Security

- Joint Pub 3-10 *Doctrine for Joint Rear Area Operations*

The three publications that currently guide joint planning (the 5-Series in Figure I-1) contain documents describing Campaign Planning, Joint Task Force Planning, and the Joint Operation Planning and Execution System (JOPES). These publications focus on what happens after the force arrives in its objective area, or how it should prepare movement data to accomplish the deployment through the LOC. There is, however, no overarching joint publication that describes how the lines of communication should be developed to support a military force when it projects its capabilities from the CONUS or another overseas area into a contingency area. Such a document should establish several fundamental principles to guide planners:

- The roles and responsibilities of the various supporting combatant commands, Defense agencies, and Service organizations, and the command relationships among them during planning and operation of the LOC.

- An integrated description of all of the operations that occur in the LOC which are currently covered by separate joint publications.
- The interrelationship among all of the LOC nodes from the CONUS or another overseas area into the contingency area.
- The procedures for obtaining host nation support, and sharing the theater LOC with other allied military or civilian organizations during combined contingencies.

The geographic combatant commands, U.S. Transportation Command, (USTRANSCOM), and their components need such a joint document to support their efforts during contingency planning. This document could clarify responsibilities of other U.S. and allied organizations during joint and combined operations. The same document also could be used to educate future joint and Service staff officers at appropriate schools, and to train staffs during exercises.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their components, should recommend to the Joint Staff that a joint publication (possibly a 5-Series pub) be developed to establish doctrine for planning the joint and combined lines of communication through which U.S. military power can be projected to a contingency area.

3. Joint Air Terminal Doctrine

An important joint publication that has not been developed is one that describes the operations that occur at a joint air terminal. These operations are important because they occur at the location where the flows arriving by airlift enter the theater, and where responsibilities for the operations are shared both by USTRANSCOM and by the supported combatant command. The doctrine for these joint operations, instead, is partially addressed in Joint Pubs 3-17 and 4-01.1, and two multi-Service publications: *Operation of Air Force Air Terminals* (AR 59-105/AFR 76-7/OPNAVINST 4660.2/MCO 2-56-3000) and *Movement of Units in Air Force Aircraft* (FM 55-12/AFM 76-6/FMFM 4-6/OPNAVINST 4630.27A). This doctrine should be clearly specified in a single joint publication.

As air terminal, however, may be only one of many nodes that will be established within a joint reception complex. These complexes normally are established permanently in peacetime at host nation airfields that support forward stationed forces. They also will be established at designated host nation airfields for the duration of a contingency. The other nodes, described in more detail in the next chapter, provide the capabilities needed

to process arriving personnel and cargo for joint RSOI and sustainment operations, to conduct retrograde operations, and to connect the theater LOC with the air terminal so that requirements can be moved between the air terminal and the theater LOC.

The geographic combatant commands, USTRANSCOM, and their components should propose to the Joint Staff that a single joint publication be developed to outline the fundamental principles to be used by the U.S. military when a host nation's airfield and other facilities are used as a Joint Aerial Port Complex. The doctrine should include reception and sustainment of joint forces, and retrograde and redeployment operations. This publication should identify all of the interrelated nodes within the reception complex; specify a single joint commander for all U.S. military organizations that operate at the complex; define the command and control relationships among these organizations and host nation, allied, or contractors operating in the same facility; and detail the procedures to be used at the interface established within the complex between the supported combatant command and USTRANSCOM.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their components, should recommend to the Joint Staff that a single joint publication be developed to specify U.S. doctrine when establishing a Joint Aerial Port Complex at a host nation airfield to conduct reception, sustainment, retrograde, and redeployment of joint forces both during peacetime operations and during contingency deployments.

4. Joint Water Terminal Doctrine

Although there is a JTTP for Water Terminal Operations (Joint Pub 4-01.5), this publication currently does not address interrelated operations performed at other nodes within a Joint Water Port Complex during contingency operations. Examples include nodes such as Driver Holding Areas where unit drivers flown to the area are provided life support while awaiting the arrival of unit equipment sent by sea; Marshaling Areas, where separate elements of units are reassembled and placed under the control of the unit commander for onward movement; or Sea-to-Air Interface airfields where materiel arriving by sea is delivered to forward locations by theater air. This publication should expand its coverage to include the functional relationships between the water terminal and the other nodes, and the command and control relationships for all of the U.S. organizations operating within the reception complex.

Another point requiring clarification concerns the resource options available to the supported combatant commander during a contingency. For example, in peacetime,

the Military Traffic Management Command (MTMC), the Army component of USTRANSCOM, manages a number of overseas water terminals that support forward stationed forces. At these locations, MTMC manages the U.S. operations at the terminal, but employs contracted commercial operators to process the workloads. In some contingency operations, MTMC elements also can perform similar management while employing either host nation support arranged through the supported combatant command, or by contracting for commercial operators. In other contingencies where combat operations may threaten the water terminal, Army units assigned to the 7th Transportation Group can be employed to operate the water terminal.

The U.S. Army Chief of Transportation and the MTMC Commander have negotiated an agreement on a concept of operations when Army troops are employed at the water terminal. The Memorandum of Agreement (MOA) describes the relationship between the Army command (operations) and the MTMC organization (management), but does not address the communications connectivity, data reporting requirements for these operations, or the interrelationships with other nodes within the joint reception complex. The Army concept of operations was sent both to the Combined Arms Support Command (CASCOM) and to USTRANSCOM so it could be incorporated into Army and joint doctrine.⁵ Although this change has been incorporated into Army doctrine (FM 55-65, Strategic Deployment, dated 3 October 1995), joint doctrine has not been modified to incorporate this agreement.

The geographic combatant commands, USTRANSCOM, and their components should recommend to the Joint Staff that the current version of Joint Pub 4-01.5 be revised to reflect the interrelationship of all nodes within the Joint Water Port Complex; specify a single joint commander for all U.S. military organizations that operate at the complex; define the command and control relationships among these organizations and host nation, allied, or contractors that operate the facilities under various contingency options; and detail the procedures to be used at the interface established within the complex between USTRANSCOM and the supported combatant command. The joint doctrine also should incorporate the concept of operations contained in the MOA, but add the communications and data reporting aspects that MTMC must provide at the water terminal.

⁵ Memorandum for Commander in Chief, U.S. Transportation Command and Commanding General, U.S. Army Combined Arms Support Command from U.S. Army Chief of Transportation and Commander, Military Traffic Management Command, Subject: Concept of Management and Operation of Strategic, Common-User Contingency Seaports, 31 July 1995.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their components, should recommend to the Joint Staff that the current version of Joint Pub 4-01.5 be revised to incorporate all other operations within the Joint Water Port Complex, and establish the U.S. command and control arrangements for various contingency options.

C. MULTI-SERVICE RSOI DOCTRINE

Multi-Service doctrine currently does not specifically address RSOI procedures. There are, however, four multi-Service publications that address some aspects of RSOI. As mentioned earlier, air terminal operations are partially addressed in two of these publications. The Arrival/Departure Airfield Control Group (A/DACG) functions and those of the Air Force units supporting airlift operations are included in *Movement of Units in Air Force Aircraft* (FM 55-12/AFM 76-6/FMFM 4-6/OPNAVINST 4630.27A). The peacetime operation of air terminals is covered in *Operation of Air Force Air Terminals* (AR 59-105/AFR 76-7/OPNAVINST 4660.2/MCO 2-56-3000). If a joint publication is developed for Joint Aerial Port Complex operations as recommended, these publications would no longer be needed.

Two additional multi-Service publications – *DoD Common User Airlift* (AR 59-8/AFR 76-38/OPNAVINST 4630.18E/MCO 4630.6D/DLAR 4500.9) and *U.S. Army/U.S. Air Force Doctrine for Joint Airborne and Tactical Airlift Operations* (FM 100-27/AFM 2-50) – address operations already covered in joint publications. For example, Joint Pub 3-17 contains a chapter on aerial delivery operations, and Joint Pub 4-01.1 *Airlift Support to Joint Operations* contains joint tactics, techniques and procedures for obtaining airlift support. If additional multi-Service amplification is required, it should be added to the joint publication where appropriate.

As joint doctrine continues to be developed, the need for multi-Service doctrine should diminish. The Services should review the need for multi-Service doctrine, and where possible, submit this doctrine for inclusion in appropriate joint publications.

D. SERVICE RSOI DOCTRINE

Each of the Services has been and will continue to be directed by the NCA to deploy its forces to operational areas to carry out missions for the combatant commands in support of the national security strategy. Each Service component has different RSOI requirements based on their missions, composition, and employment doctrine. Currently available Service doctrine generally covers how the forces will *deploy to the theater* and

how they will be *employed once they arrive*, but not necessarily how they will conduct RSOI operations within the theater. When deployed to a theater, units of each Service (less naval afloat forces) will undergo at least the reception and integration processes of RSOI, unless they are conducting a forced entry. Naval forces afloat will undergo integration into the combatant command's force.

1. Army Doctrine

During most contingencies, the Army component usually has the largest requirement for RSOI and sustainment because of the mission, size, and composition of its forces. Typically, the Army component, as the "dominant user,"⁶ is tasked with performing many RSOI operations for all components of the supported combatant command. This includes actions associated with operation of the common-user support within the theater LOC, such as operating the receiving water terminals, providing for common-user surface transportation for onward movement, and executing surface movement control.

The Army has recognized its force projection role and plans to document the process in Field Manual (FM) 100-17. This operations publication will provide guidance for mobilizing, deploying, redeploying, and demobilizing the Army forces.⁷ A series of supporting manuals have been prepared, are in draft, or are to be developed in the near future to address various aspects of Army force projection. These publications include the following:

- FM 100-17-1: *Army Prepositioned Afloat Operations* provides guidance for commands employing the Army Prepositioned Afloat equipment managed as Army War Reserve (AWR) set 3 by the Army Materiel Command.
- FM 100-17-2: *Army Prepositioned Ashore Operations*, will provide guidance for commands employing Army War Reserves prepositioned as unit sets on land.
- FM 100-17-3: *Reception, Staging, Onward Movement and Integration* currently in working draft, specifically addresses Army RSOI operations.
- FM 100-17-4: *Deployment* will address the movement from home station to the port of embarkation.

⁶ Dominant User - The concept that the Service that is the principal consumer will have the responsibility for performance of a support workload for all using Services. (Source: Joint Pub 1-02)

⁷ Publication has been postponed until the supporting publications listed are completed.

- FM 100-17-5: *Redployment* will address the redeployment from an overseas operation.

Other Army doctrinal publications address the transportation and movement control aspects of RSOI operations. These publications include the following:

- FM 55-1: *Army Transportation Services in a Theater of Operations* provides an overview of Army transportation doctrine and discusses certain aspects of the RSOI process to include reception and movement control.
- FM 55-9: *Unit Air Movement Planning* describes the Army's role at both the departure and arrival airfields when deploying by air.
- FM 55-10: *Movement Control in a Theater of Operations* discusses reception in overseas theaters and movement control, and delineates some specific responsibilities.
- FM 55-60: *Army Terminal Operations* provides guidance for Army marine and inland terminal operations.
- FM 55-65: *Strategic Deployment* devotes a chapter to reception and onward movement.

The Army has assigned the mission of performing RSOI to the Area Support Group (ASG) and describes these tasks and supporting doctrine in the Area Support Group FM (FM 54-40). The ASG is typically assigned to the Theater Army Area Command (TAACOM), a support organization that is usually under the command of the Army component commander. Chapter III of this report will describe an Army concept to reorganize its theater echelon support forces into a Theater Support Command (TSC), and an alternative proposed for a Joint Theater Support Command (JTSC) also will be discussed.

Although many of these publications are still under development and others have recently been updated, they lack consistent terminology to describe the parts of the RSOI process. As an example, Joint Pub 1-02 (which is the definitive publication for standard military terminology) defines an ISB as an *Intermediate Staging Base*. The draft FM 100-17-3 (*RSOI*) refers to an ISB as an *In-theater Staging Base*. FM 55-65 (*Strategic Deployment*), defines an ISB as an *Intermediate Support Base*. As joint doctrine is developed for RSOI operations, a standard, coordinated, and approved terminology must be used by the joint and Service publications. This issue is discussed in more detail in Chapter II of this report.

While the Army has identified and is developing doctrine relating to the deployment process, there are still some areas that need improvement. FM 55-65

delineates many of the responsibilities of Army units at reception complexes, but some of the concepts are unclear. For example, the manual states that "reception at the APOD (aerial port of debarkation) is coordinated by the senior logistics commander and executed by an ATMCT (air terminal movement control team)." It does not address who the senior logistics commander is, or who is responsible for U.S. operations at this complex. It does state that the "SPOD (seaport of debarkation) will be commanded by MTMC or operated by the transportation group until MTMC can negotiate HN/commercial contracts." This is somewhat inconsistent with the MOA cited earlier.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their Army components, should evaluate emerging Army RSOI doctrine during command post and field training exercises and provide recommendations for improving these publications, and recommend that common joint terminology be used for Army doctrine whenever possible.

2. Naval Doctrine

Naval doctrine is contained in a series of Naval Doctrine Publications (NDPs). NDP-1 *Naval Warfare* is the capstone document that provides a framework for detailed Navy and Marine Corps doctrine, and describes how these forces accomplish their missions and execute their roles as part of the joint military team. Other publications specifically address the following functional areas:

- NDP-2 *Naval Intelligence*.
- NDP-3 *Naval Operations*.
- NDP-4 *Naval Logistics*.
- NDP-5 *Naval Planning*.
- NDP-6 *Naval Command and Control*.

NDP-4 highlights several important points related to RSOI operations. First, it identifies "logistic support units and installations, lines of communication, and transportation nodes" as high-value targets that must be protected. Next, it suggests that perhaps one of the most important planning considerations is to achieve proper phasing of personnel, equipment, and supplies into the theater. This phasing "ensures that terminals and ports of entry are not glutted – but more important, phasing ensures that the right combinations of combat-ready units arrive on time with proper logistic support." Finally, NDP-4 stresses the importance of achieving a proper balance between war fighters and logistic support forces during the deployment, and recognizes that this

balance differs depending on the infrastructure available at the deployment location. When deploying to an austere location, "combat service support units will be needed early in the flow to facilitate the reception and onward movement of forces."

When naval forces are deployed to a contingency, the force primarily is afloat, and these elements are sustained, to the maximum extent possible, by the Combat Logistics Force (CLF). The CLF includes oilers, ammunition ships, and stores ships to perform underway replenishment and shore-battle group shuttle functions.

For some contingencies, it may be necessary to establish shore-based facilities temporarily to station land-based patrol squadrons, Navy special forces, contingency hospitals, or other land-based naval elements that support the afloat force or the elements stationed ashore such as construction battalions. Advanced Logistic Support Sites (ALSSs) are Service operated reception facilities established in forward areas to support longer term contingency operations. These facilities are used for intermodal and intramodal transfers of non-unit related personnel and cargo needed to sustain the afloat forces and other elements stationed ashore.

The ALSS is often a large complex that usually includes a host nation water terminal and an air terminal capable of handling strategic sealift and airlift. Smaller sites located closer to the operational areas of the afloat forces are sometimes established, and these are called Forward Logistic Sites (FLSs). Reception, transfer operations, and onward movement of sustainment to afloat forces (or other shore-based elements) is managed by elements assigned to the ALSS or FLS. Movement requirements are transferred at the ALSS or FLS to ships of the Underway Replenishment Group (URG) or to Carrier Onboard Delivery/Vertical Onboard Delivery (COD/VOD) aircraft for onward movement to the afloat forces.

Naval commands prepare Logistic Support and Mobilization Plans (LSMPs) to implement the naval doctrine to support specific planned operations. The LSMP provides guidance for sustaining the forces during a major contingency, and when necessary, augmenting existing shore-based facilities or opening new facilities such as ALSSs or FLSs during the contingency. The LSMP details responsibilities, assigns tasks, and identifies the force structure needed to accomplish these tasks using Advanced Base Functional Components (ABFC). The LSMP also identifies the host nation facilities and support to be provided, and the capabilities of the facilities.

The ABFC is a defined grouping of personnel, materiel, and facilities needed to perform specific tasks at the base. The procedures for conducting naval RSOI operations

to sustain the force are mission essential tasks for ABFC-defined units. The procedures for conducting RSOI operations for naval units deploying to shore-based facilities, however, have not been included in current naval doctrine or the implementing LSMPs. These procedures should be developed for ABFC units that establish the ALSSs and FLSs, and for other units deploying to shore-based facilities in the geographic combatant command's AOR. The procedures should be documented in NDPs and include how these forces will be received, staged, moved onward to final destinations, and integrated into the supported combatant command's force.

USACOM, in coordination with the other geographic combatant commands and their Navy components, should recommend to the Department of Navy that naval doctrine include RSOI operations for units that deploy to shore-based facilities located in their AORs, and for those elements that require movement from shore-based facilities to the forces afloat.

3. Air Force Doctrine

Most of the Air Force component deploys to and operates from fixed bases within or near the contingency area. In most cases, they deploy directly to the airfields at which they will be employed, so the reception and integration functions occur at, or near, the air terminal. However, there are a number of other Air Force units or elements that deploy in support of Army units (e.g., tactical air control parties and weather detachments), in support of air operations (e.g., remote communications and elements of the tactical air control system), or in a general theater support role (as with Rapid Engineer Deployable, Heavy Operational Repair Squadron, Engineer (RED HORSE) units). These elements typically will undergo the entire RSOI process.

The Air Force publications that were reviewed for this study include all Air Force Doctrine Documents (AFDD), all "10 Series" (Operations), "20 Series" (Logistics), "24 Series" (Transportation), and "25 Series" (Logistics Staff) publications. None specifically address all of the RSOI functions, although there are some publications that do address certain aspects of the RSOI process, without using the term RSOI.

- Air Force Doctrine Document (AFDD) 40, *Logistics*, recognizes that there are a series of logistics processes necessary to "convert resources into military capability." One of these critical processes is integration, which is defined in the document as "the blending or joining together of weapon systems (or their elements) to meet military requirements."
- Air Force Instruction (AFI) 10-404, *Base Support Planning*, defines the responsibilities of the reception base installation commander and establishes

criteria for the development of the Base Support Plan (BSP). The BSP addresses the wartime support requirements for forces stationed at the base, units transiting the base, and evacuees and casualties.

In the case of Air Force elements requiring movement from the air or water terminal to an employment location, the procedures for obtaining common-user transportation are not provided in doctrine, except in the case of RED HORSE. Each RED HORSE unit develops over-the-road movement plans for conducting road marches between main operating bases, collocated operating bases, bare bases, and outlying sites in their contingency area. According to Air Force Instructions, the air component commander is responsible for moving RED HORSE equipment and supplies from the POD to their destination.⁸

While all Air Force units deploying to a theater will undergo reception and integration, only a small number of them will need to complete all of the RSOI processes. Air Force doctrine should provide comprehensive guidance for how these units will accomplish these operations, including where joint or common-user support will be provided to the deploying units. Other units that will conduct only reception and integration in the supported combatant command's AOR also require guidance on how these processes will be accomplished at main operating bases, collocated operating bases, bare bases, and outlying sites. The RSOI processing of non-unit personnel and materiel through the theater LOC nodes should also be addressed in these publications.

USACOM, in coordination with the other geographic combatant commands, USTRANSCOM, and their Air components, should recommend that doctrinal publications or instructions be developed by the Air Force to establish RSOI procedures for deploying its units and non-unit personnel and materiel into a supported combatant command's AOR.

4. Marine Corps Doctrine

The Marine component is unique in that it is designed for expeditionary warfare (including amphibious warfare) and operates either afloat or ashore. When executing an amphibious forced entry, the force is tactically configured and would not initiate RSOI operations until conditions allowed.

Marine Corps Order (MCO) P3000.18, *Marine Corps Planner's Manual*, is an excellent publication which is designed to standardize operational procedures to be used

⁸ AFI 1-209, *RED HORSE Program*, 29 April 1994.

during deliberate or crisis action planning. Chapter 10 of this publication addresses the deployment of Marine forces and presents a comprehensive summary of deployment policy, guidance, and responsibilities. Chapter 13 addresses logistics and MAGTF sustainment. While these chapters make no specific reference to RSOI operations, Chapter 13 does state that "Navy-Marine Corps forces are generally self-sufficient for ship-to-shore movement. Once established ashore, the MAGTF may require interservice or host nation transportation support/augmentation for requirements which exceed organic lift capabilities." The publication then describes the process which the MAGTF should use to request this transportation augmentation.

A review of Fleet Marine Force Reference Publication (FMFRP) 1-11, *Fleet Marine Force Organization*, shows that the Landing Support Battalion (LSB), a subordinate unit of the Force Service Support Group (FSSG), has the capability to provide some RSOI functions for deploying Marine forces. The LSB is comprised of the following companies: Headquarters and Service Company, Landing Support Equipment Company, Beach and Terminal Operations Company, and Landing Support Company.

The Beach and Terminal Operations Company is organized to facilitate throughput operations in support of MAGTF operations. The company provides management and operation of ports, air heads, railheads, and other cargo/passenger terminal operations as well as air delivery support. The Landing Support Company is tasked with coordinating the unloading of supplies from ships in support of Marine Expeditionary Force (MEF) operations, coordinating transportation support for the evacuation of casualties and enemy prisoners of war, and providing the Service A/DACG to facilitate the control and coordination of loading and unloading operations. This company has the capability to task organize so that it can operate several theater LOC nodes when supporting Marine force deployments.

The Motor Transport Battalion, also a subordinate unit of the FSSG, can provide limited onward movement capabilities for deploying Marine forces. They are tasked with providing medium and heavy lift transportation of supplies and personnel in support of the MEF.

Marine forces deploying to a theater to draw equipment from the Maritime Prepositioning Ships (MPS) will undergo the RSOI process. FMFM 1-5, *Maritime Prepositioning Force (MPF) Operations* (also published as Naval Warfare Publication (NWP) 22-10) addresses responsibilities and organizational structure for MPF operations, including support from naval elements such as the Navy Cargo Handling Port Group

(NAVCHAPGRU). This publication provides extensive guidance for the arrival and offload (reception), and assembly (staging) phases of MPF operations, but makes no reference to onward movement or integration operations. Unless conducting a beach offload operation, MPF operations may rely heavily on existing host nation resources and infrastructure, and use of existing host nation and interservice support is encouraged whenever possible.

The Survey Liaison Reconnaissance Party (SLRP) normally deploys to the Arrival and Assembly Area (AAA) five to seven days prior to the arrival of the first MPS. The mission of the SLRP is to conduct initial reconnaissance, establish liaison with theater authorities, and initiate preparations for the arrival of the main body of the Fly In Echelon (FIE) and the MPS Squadron (MPSRON). Very often, advance liaison with the host country is conducted, and host nation support capabilities are determined at that time. Host nation support agreements (HNSA) may even be negotiated ahead of time, which is preferable.⁹

The Marines also establish a Service A/DACG at the arrival airfield. Normally, ships with unit equipment are timed to arrive no later than 24 hours after the initial elements of unit personnel are airlifted to the contingency area. Although FMFM 1-5 states that plans for the movement of personnel and equipment from the arrival airfield to the element assembly areas must be detailed, it does not specify how reception, staging, or onward movement will be accomplished. It also is unclear which organization is responsible for providing life support for the arriving personnel until they form into units and become self-sufficient. If more than one Service is deploying into the same airfield, a joint A/DACG could be established. In addition, if more than one Service's equipment is arriving at a water terminal, a joint Drivers Holding Area could eliminate duplication of resources.

USACOM, in coordination with the other geographic combatant commands and their Marine components, should recommend that the Marine Corps Doctrine Command review its existing deployment doctrine as joint doctrine emerges, and clarify the actions and responsibilities for planning, coordinating, and executing Marine Corps RSOI operations within the supported command's AOR.

⁹ Although combatant commanders are responsible for representing the U.S. in HNS negotiations, they may delegate authority to develop and negotiate HNSAs to joint or uni-Service teams.

E. COMBINED RSOI DOCTRINE

With the exception of operations involving the few standing alliances, the U.S. military involvement in combined operations will generally be within the framework of a coalition formed temporarily to achieve a specific purpose. In some cases, the operation will occur in an area where viable national governments exist and they are likely to be members of the coalition; a situation similar to that which occurred during Operations Desert Shield and Desert Storm. In other cases, the combined operation may be conducted in a failed state as occurred during recent contingencies in Somalia, Rwanda, Haiti, and Bosnia. Often, the coalition will include non-military participants such as International Organizations (IOs) (e.g., United Nations agencies, the International Committee of the Red Cross, the International Federation of the Red Cross), and non-governmental and private volunteer organizations (NGOs and PVOs).

Joint and Service RSOI doctrine must include principles and procedures for conducting deployment operations in combined as well as in joint environments, including situations where non-military organizations (IOs, NGOs, and PVOs) also participate in the contingency.

1. NATO Doctrine

One of the most successful alliances of this century is the North Atlantic Treaty Organization (NATO). NATO is a political and military alliance of 16 member nations and currently has an additional 27 partner countries associated through the Partnership for Peace (PfP) Program. To guide its military operations, NATO – under the auspices of its Military Committee (MC) – has published a number of documents containing policies, doctrine, and procedures that are related to combined RSOI operations.

With the dissolution of the Warsaw Pact and the Soviet Union, the military threat to the member nations of the Alliance changed dramatically. The Rapid Reinforcement Plans and the General Defense Plans which formed the basis for NATO's strategy for defending within predetermined sectors were no longer relevant in the new environment. In response to the changes in environment and guidance from the Heads of State and Government, the NATO Military Committee developed, in coordination with member nations, three policy documents related to RSOI operations which establish the fundamental principles to guide the military forces of the Alliance during future operations. These documents are: MC-317 – NATO Force Structures for the Mid 1990s and Beyond; MC-319 – NATO Principles and Policies for Logistics; and MC-336 – A Movement, Transportation, and Mobility Management Concept for NATO.

The first document (MC-317) recognized the less predictable nature of future contingency planning and the need for forces to be able to respond to a wider range of contingencies in the new environment. It established multinational force structures, relaxed readiness requirements for all but specified reaction forces, and tasked the forces to plan to reinforce anywhere within NATO territory. The military forces and host nations were to develop the plans and logistic and transportation (RSOI-related) capabilities to facilitate the rapid reinforcement into these potential contingency areas.

Within the Alliance, logistics has been a national responsibility. Reinforcing nations were responsible for arranging with allied host nations for the use of facilities to deploy forces into that allied nation's territory and for sustaining their own forces when employed. The U.S. accomplished this coordination for RSOI operations through a complex hierarchy of host nation support documentation that established bilateral agreements which generally became operative upon declaration of certain NATO emergency measures. The second document (MC-319) modified this concept of logistics from being one based purely on national responsibility to a multinational logistics concept based on shared responsibilities between nations and NATO authorities. This document grants the NATO Commander at agreed levels authority to redistribute specified logistics assets committed by nations for the support of forces placed under NATO command, although this was not the case during Operation Joint Endeavor. The commander's authority also includes establishing host nation support requirements, and negotiating and concluding these agreements on behalf of nations sending forces. This principle places the combined force commander in a position of planning and arranging host nation support for deploying forces.

The third document (MC-336) amplifies the principles of movement, transportation, and mobility addressed broadly in MC-319. The document defines and explains the Alliance Movement and Transportation System (AMTS) and outlines the collective responsibilities of nations and NATO authorities regarding movement and transportation support. Sending nations are responsible for obtaining transportation resources, and for planning and controlling the movement of national forces and national components of multinational forces. NATO Commanders are responsible for: (1) initiating, prioritizing, coordinating, and deconflicting the deployment, sustainment, and redeployment of their respective forces, and (2) obtaining transportation resources and planning and controlling the movement of multinational headquarters approved for common-funded support. Host nations control and coordinate movement of Alliance forces on their territories, taking into account NATO Commanders' requirements.

Coordination of movements and transportation planning and execution between the national military and civil authorities and the NATO Commanders is essential to ensure success of combined movements. Information to provide visibility into these movements is also critical. The national automated systems are to be incorporated into the architecture of the Allied Command Europe (ACE) Automated Command and Control Information System (ACCIS) so that information exchanges between NATO Commanders and the nations can be accomplished. Within this architecture, the ACE Deployment and Movement System (ADAMS) is the key automated system to enable all nations and NATO Commanders to coordinate their movement and transportation requirements.

In coordination with member nations, NATO has also developed and published several Allied Tactical and Logistics Publications (ATPs and ALPs) to guide joint and combined military operations. STANAG 2406 – ALP-9 – NATO Land Forces Logistic Doctrine and ALP-12 – Guidance for Planning and Preparation of Host Nation Support Agreements/Arrangements are two documents related directly to RSOI operations. ALP-9 outlines procedures for accomplishing multinational logistics support, including host nation support, movement and transportation, civil-military cooperation, and command and control of logistics capabilities within the combined land forces. It does not, however, provide specific guidance on planning or conducting combined RSOI operations. ALP-12 establishes the administrative procedures for planning and preparing host nation support agreements within the Alliance.

NATO Standardization Agreements (STANAGs) are detailed procedures developed by the Military Committee, and agreed to by member nations, to facilitate coordination of combined military operations during exercises, crises, or war. All STANAGs have been provided to the partner countries to guide their military operations with NATO forces and applicable STANAGs also are used by the civil agencies of the Alliance and its member nations. Many of these agreements are directly related to RSOI actions. STANAG 2135 – Procedures for Emergency Logistic Assistance; STANAG 2156 – Surface Transportation Request and Surface Transportation Reply; and STANAG 2165 – Forecast Movement/Transport Requirements – Rail, Road, and Inland Waterways are examples of the many STANAGs currently in use.

Joint and Service RSOI doctrine should incorporate doctrine and procedures already agreed to in STANAGs and other NATO documents to ensure U.S. personnel are aware of their content and to facilitate cooperation during operations involving NATO member and partner forces.

Operation Joint Endeavor, initiated in December 1995, is a major joint and combined operation conducted by NATO under authority of a United Nations Security Council Resolution (UNSCR). This operation was a unique experience from two important aspects. It was the first time NATO's multinational forces – the ACE Rapid Reaction Corps (ARRC) and three framework multinational divisions – deployed to conduct operations outside of NATO member territory; a NATO “out of area” operation. Additionally, the operation involved all 16 member nations, 14 of the PfP countries, and four allied non-NATO Islamic nations.

The movement of the Implementation Force (IFOR) was preceded by several days by the deployment of what was termed an “enabling force” to facilitate the movement of the main force and the transfer of authority and responsibility for the mission from the United Nations Protection Force already located in Bosnia to the deploying NATO forces. The enabling force was a combined force that included U.S. headquarters and communications elements.

Another unique organizational element of IFOR was its Commander for Support (C-Spt), established as a separate functional organization reporting directly to the Commander of IFOR. Because NATO command does not convey directive authority over logistics, C-Spt was only able to achieve multinational cooperation in a limited number of areas. The C-Spt headquarters, located in Croatia, was able to implement multinational contracting procedures for all IFOR participating nations, and these actions resulted in considerable cost reductions for participating nations. IFOR engineering support for bridge construction and repair, route maintenance, and facilities use was coordinated by C-Spt throughout Croatia and with the ARRC in Bosnia. The medical support for IFOR participants, particularly the smaller nations, also was coordinated by C-Spt, including medical evacuation and hospitalization at the multinational hospital operated by the French and German units to support all IFOR forces.

C-Spt also established and operated a Combined/Joint Movement Control Center (C/JMCC) and was assigned the territory of Croatia as its AOR. This organization coordinated IFOR movements into the AOR with the ACE Movements Control Center (AMCC) located at Supreme Headquarters Allied Powers Europe (SHAPE), within Croatia with the host nation authorities, and into Bosnia with the ARRC's movement organization. While transiting Croatia, the NATO deployment plan required national forces to be placed under the Tactical Control (TACON) of C-Spt. Similar arrangements currently are planned for the redeployment.

The experience gained by NATO, U.S., and allied organizations through planning and deploying the multinational forces, and subsequently employing and redeploying them should provide the NATO authorities and the member nations with valuable lessons that can be used to improve the doctrinal publications in the event of subsequent combined operations outside of NATO's territory. The U.S. should incorporate the most important of these lessons into its emerging joint RSOI doctrine.

Joint and Service RSOI doctrine should incorporate significant lessons learned from U.S. and allied force participation in Operation Joint Endeavor.

2. ABCA Doctrine

Another standing combined organization in which the United States participates is the American, British, Canadian, and Australian (ABCA) Armies Standardization Program, which since 1965 has also included New Zealand. This program evolved from the close cooperation among the allied nations during World War II and was initially formalized in 1947 "to ensure that in time of necessity there would be no materiel or technical obstacles to the full cooperation among the Armies concerned and to obtain the greatest possible economy in the use of combined resources and efforts."¹⁰ The ABCA operates as a combined Service program, not as a joint and combined program. The combined Army organization, however, maintains liaison with similar Service or functional agencies established among the member nations. These other ABCA agencies include The Technical Cooperation Program (TTCP), the Naval Quadripartite Standardization Program, the Air Standardization Coordinating Committee (ASCC), and the Combined Communications and Electronics Board (CCEB).

These organizations exchange information and ideas, determine common requirements, develop materiel and non-materiel Quadripartite Standardization Agreements (QSTAGs), and provide for the reciprocal use of equipment for test and evaluation for the purposes of achieving standardization and interoperability. The Quadripartite Working Group on Logistics (QWG Log) is currently working on a task to "Achieve compatible procedures for the reception of ABCA forces into a theater of operations." It is expected that this will result in a QSTAG by the summer of 1998. The QWG Log also is currently working on other related topics including:

¹⁰ American, British, Canadian, Australian Armies Standardization Program Information Booklet, 16 April 1989.

- Procedures for tracing, tracking, and controlling personnel.
- Procedures for negotiating and coordinating host nation support.
- Movement control.

Establishing quadripartite agreement on doctrine and procedures for planning and conducting RSOI operations in a joint and combined environment could serve as the first step to achieving wider agreement in NATO and with other allies. Once established, the doctrine and procedures provide a common framework that should facilitate carrying out these operations during contingencies, especially during OOTW situations where some of these military forces recently have worked together with U.S. elements in Turkey, Somalia, and Bosnia. These procedures might be included in a QSTAG or in Quadripartite Standing Operating Procedures (QSOP).

As joint doctrine for RSOI is approved, the U.S. Army should introduce these concepts, procedures, and terminology into the Quadripartite Working Group (QWG) to be incorporated into a QSTAG or QSOP.

3. Doctrine for Other Combined Organizations

U.S. forces stationed in Korea work closely with the Combined Forces Command Korea during exercises and will be integrated into the combined force structure during crisis or wartime operations. The combined organization does not have the formalized structure for developing combined doctrine that is found in NATO, and instead relies more on coordination during operational planning, standing operating procedures, and host nation support agreements to facilitate cooperation among allied forces and between the forces and the host nation authorities.

In other areas, coalitions are truly *ad hoc*, formed by participating nations when there is a need for their military forces to cooperate during an emerging crisis. Bilateral agreements with the host nation or familiarity with military force organizations through long term affiliations may be the only basis for achieving cooperative military action during the contingency. If time permits, these coalitions could benefit from the exchange of available U.S. doctrinal publications and other combined publications such as the NATO documents and STANAGs so that common understanding and unified responses can be effected.

CHAPTER II

JOINT RSOI TERMINOLOGY

II. JOINT RSOI TERMINOLOGY

This section provides a lexicon related to joint Reception, Staging, Onward Movement, and Integration (RSOI) in order to describe the functions, locations, and organizations that are essential to joint RSOI operations. Some terms have agreed joint definitions and are shown in **boldface**. Other terms have proposed definitions or modifications to existing definitions and have been provided for consideration and approval by the Department of Defense for joint use. These terms or modifications to existing definitions are shown in ***boldface italics***. The lexicon is intended to provide an unambiguous, common understanding of the elements of joint RSOI operations and to serve as a dictionary for developing consistent and comprehensive joint doctrine for accomplishing these functions during contingencies¹ or war.

A. AUTHORITY AND RESPONSIBILITIES OF UNIFIED COMBATANT COMMANDERS

To plan and conduct military operations effectively, the National Command Authorities (NCA) have established five unified combatant commands and assigned them specific geographic areas of responsibility (AORs) in the Unified Command Plan (UCP).

Area of Responsibility – The geographical area associated with a combatant command within which a combatant commander has authority to plan and conduct operations. (Source: Joint Pub 1-02)

Four additional combatant commands also have been established by the NCA, with functional responsibilities related to space, strategic weapons, special operations, or transportation. Each combatant commander exercises a special command authority over the forces assigned to the command. This authority, called combatant command, is defined as follows:

Combatant Command – Nontransferable command authority established by title 10, United States Code, section 164, exercised only by commanders of unified or specified combatant commands unless

¹ **Contingency** – An emergency involving military forces caused by natural disasters, terrorists, subversives, or by required military operations. Due to the uncertainty of the situation, contingencies require plans, rapid response, and special procedures to ensure the safety and readiness of personnel, installations, and equipment. (Source: Joint Pub 1-02)

otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) is the authority of a combatant commander to perform the functions of command over assigned forces that involve organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations; normally this authority is exercised through the Service or functional component commander. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Also called COCOM. (Source: Joint Pub 1-02).

B. PROJECTION OF U.S. MILITARY CAPABILITIES

The United States requires a strategic mobility capability to project its military power wherever and whenever it is needed.

Strategic Mobility – The capability to deploy and sustain military forces worldwide in support of national strategy. (Source: Joint Pub 1-02)

The Department of Defense has developed a significant strategic mobility capability, referred to as the Defense Transportation System, using government owned and commercially acquired resources. The majority of military requirements are transported to a supported combatant command's AOR by two strategic modes. These are strategic sealift, which past experience has shown to move 90 to 95 percent of the total requirement, and strategic airlift, which typically moves 5 to 10 percent of the total requirement. Smaller contingencies and those requiring rapid response, or operations involving shorter deployment distances, normally rely more heavily on airlift. The definitions of strategic airlift and strategic sealift follow:

Strategic Airlift – The airlift capability necessary to deploy and sustain military forces worldwide in support of national strategy. (Source: Joint Pub 4-01)

Strategic Sealift – The afloat prepositioning and ocean movement of military materiel in support of US and allied forces. Sealift forces include organic and commercially acquired shipping and shipping services, including chartered foreign-flag vessels. (Source: Joint Pub 1-02)

When forces are loaded on strategic airlift or sealift, one of three loading options is specified, based on the requirements of the supported combatant commander. The configuration of the loads will have an impact on how rapidly the forces can be

reassembled in the new AOR. Combat loading typically is used when forced entry is required.

Combat Loading – The arrangement of personnel and the stowage of equipment and supplies in a manner designed to conform to the anticipated tactical operation of the organization embarked. Each individual item is stowed so that it can be unloaded at the required time. (Source: Joint Pub 1-02)

Unit or administrative loading is normally employed during deployments where forced entry is not required.

Unit Loading – The loading of troop units with their equipment and supplies in the same vessels, aircraft, or land vehicles. (Source: Joint Pub 1-02)

Administrative Loading – A loading system which gives primary consideration to achieving maximum utilization of troop and cargo space without regard to tactical considerations. Equipment and supplies must be unloaded and sorted before they can be used. Also called commercial loading. (Source: Joint Pub 1-02)

Unit loading will reduce the time required to reassemble the units of the deploying force in the new AOR, but administrative loading, while taking longer to reassemble the units of the force, will make more efficient use of available lift resources. These are trade-offs that must be considered by the supported combatant commander when the type of loading is specified for a deployment.

Deployments by strategic airlift and sealift during contingencies normally are conducted as administrative movements.

Administrative Movement – A movement in which troops and vehicles are arranged to expedite their movement and conserve time and energy when no enemy interference, except by air, is anticipated. (Source: Joint Pub 1-02)

A number of other terms related to the strategic mobility capabilities of the DoD are described in the sections that follow. They include terms used to describe common-user, air, maritime, and commercial transportation resources employed by the DoD.

1. Defense Common-User Transportation Resources

The Department of Defense maintains a pool of resources that satisfy the needs of several potential users. This resource pool is generally referred to as common-user transportation.

Common-User Transportation – Transportation and transportation services provided on a common basis for two or more Department of Defense agencies and, as authorized, non-DoD agencies. (Source: Joint Pub 4-01)

The U.S. Transportation Command has been designated as the single manager for the DoD and controls Common-User Lift.

Common-User Lift – U.S. Transportation Command-controlled lift: The pool of strategic transportation assets either government owned or chartered that are under the operational control of Air Mobility Command, Military Sealift Command, or Military Traffic Management Command for the purpose of providing common-user transportation to the Department of Defense across the range of military operations. These assets range from common-user organic or chartered pool of common-user assets available day-to-day to a larger pool of common-user assets phased in from other sources. (Source: Joint Pub 1-02)

Two transportation modes have common-user definitions.

Common-User Airlift Service – The airlift service provided on a common basis for all DoD agencies and, as authorized, for other agencies of the U.S. Government. (Source: Joint Pub 1-02)

Common-User Military Land Transportation – Point-to-point land transportation service operated by a single Service for common use by two or more Services. (Source: Joint Pub 1-02)

Common-user sealift is referred to as the Strategic Sealift Force.

Strategic Sealift Force – Common-user sealift assets of the MSC force, including fast sealift ships and prepositioned ships on completion of their mission and release, that furnish the capability to deploy and sustain military forces. The normal peacetime force may be augmented by shipping from the Ready Reserve Fleet and National Defense Reserve Fleet and from U.S. and allied merchant fleets. (Source: AFSC Pub 1)

2. Defense Air Transportation Resources

The range and payload capabilities of air transportation resources generally classify them as either intertheater – capable of carrying loads between the CONUS and the overseas theaters, or between overseas theaters – or as theater airlift, which normally operates within a single theater. U.S. Transportation Command usually retains COCOM of intertheater airlift resources, but theater airlift is generally assigned to the Air Component Commands of the geographic combatant commands.

Intertheater Airlift – The air movement of personnel and materiel between the continental United States (CONUS) and overseas areas, or

between overseas areas, normally over long distances. (Source: AFM 11-1)

Theater Airlift – That airlift assigned to the combatant command (command authority) of a combatant commander other than USCINCTRANS, which provides air movement and delivery of personnel and equipment directly into objective areas through air landing, airdrop, extraction, or other delivery techniques; and the air logistic support of all theater forces, including those engaged in combat operations, to meet specific theater objectives and requirements. (Approved for inclusion in the next edition of Joint Pub 1-02)

Intertheater or theater airlift resources are operated as regularly scheduled channel airlift or as special assignment airlift missions (SAAMs).

Channel Airlift – Common-user airlift service provided on a scheduled basis between two points. (Source: Joint Pub 1-02) There are two types of channel missions. A Requirement Channel is an Air Mobility Command channel that serves two or more points on a scheduled basis depending upon the volume of traffic. A Frequency Channel is Air Mobility Command airlift service provided at U.S. Transportation Command approved frequency, based on user needs. (Source: Joint Pub 4-01)

Special Assignment Airlift Requirements – Airlift requirements, including JCS-directed/coordinated exercises, that require special consideration due to the number of passengers involved, weight or size of cargo, urgency of movement, sensitivity or other valid factors that preclude the use of channel airlift. (Source: Joint Pub 1-02)

3. Defense Maritime Transportation Resources

The maritime resources of the DoD are subdivided into several categories.

National Defense Reserve Fleet – a. Including the Ready Reserve Force, a fleet composed of ships acquired and maintained by the Maritime Administration (MARAD) for use in mobilization or emergency. b. Less the Ready Reserve Force, a fleet composed of the older dry cargo ships, tankers, troop transports, and other assets in the MARAD's custody that are maintained at a relatively low level of readiness. They are acquired by MARAD from commercial ship operators under the provisions of the Merchant Marine Act of 1936; they are available only on mobilization or congressional declaration of an emergency. Because the ships are maintained in state of minimum preservation, activation requires 30 to 90 days and extensive shipyard work for many. (Source: Joint Pub 1-02)

Ready Reserve Force – A force composed of ships acquired by the Maritime Administration (MARAD) with Navy funding and newer ships acquired by the MARAD for the National Defense Reserve Fleet (NDRF). Although part of the NDRF, ships of the Ready Reserve Force are maintained in a higher state of readiness and can be made available without mobilization or congressionally declared state of emergency. (Source: Joint Pub 1-02)

Maritime Prepositioning Ships (MPS) – Civilian-crewed, Military Sealift Command-chartered ships which are organized into three squadrons and are usually forward-deployed. These ships are loaded with prepositioned equipment and 30 days of supplies to support three Marine expeditionary brigades. (Source: Joint Pub 1-02)

Afloat Prepositioning Force (APF) – Shipping maintained in a full operational status to afloat preposition military materiel in support of unified commanders operation plans. The APF is the functional successor to the Near Term Prepositioning Force, which was disestablished with the deployment of Maritime Prepositioning Squadron TWO. The APF consists of the MPS and the prepositioning (depot) ships, and is deployed worldwide. (Source: Joint Pub 4-01.6)

Intracoastal Sealift – Shipping used primarily for the carriage of personnel and/or cargo along a coast or into river ports to support operations within a given area. (Source: Joint Pub 1-02)

Fast Sealift Ships (FSS) – A fleet of eight Roll-on/Roll-off vessels, owned by the Navy and operated by the Military Sealift Command, used by the DoD to transport military materiel during exercise or contingency operations. (Source: Stipulated).

4. Cooperative Defense Programs with the Commercial Transportation Industry

The Department of Defense also has established three programs with the commercial transportation industry to obtain augmentation to existing transportation resources and services during contingency operations.

Civil Reserve Air Fleet (CRAF) – A program in which the Department of Defense uses aircraft owned by a US entity or citizen. The aircraft are allocated by the Department of Transportation to augment the military airlift capability of the Department of Defense (DoD). These aircraft are allocated, in accordance with DoD requirements, to segments, according to their capabilities, such as Long-Range International (cargo and passenger), Short-Range International, Domestic, Alaskan, Aeromedical, and other segments as may be mutually agreed upon by the Department of Defense and the Department of Transportation. The Civil Reserve Air Fleet (CRAF) can be incrementally activated by the Department of Defense in three stages in response to defense-oriented situations, up to and including a declared national emergency or war, to satisfy DoD airlift requirements. When activated, CRAF aircraft are under the mission control of the Department of Defense while remaining a civil resource under the operational control of the responsible US entity or citizen. (Source: Joint Pub 1-02)

Voluntary Intermodal Sealift Agreement (VISA) – An agreement, effective 1 October 1995, between the 14 U.S. leading shipping companies and the DoD that places ships and port facilities at the disposal of the U.S. Transportation Command during a contingency. In return, the shipping

companies receive guaranteed rates from the DoD during both peace and war. (Source: Army Times, 4 September 1995)

Contingency Response Program (CORE) – Transportation emergency preparedness program designed to ensure that the Department of Defense receives priority commercial transportation services during defense contingencies prior to the declaration of national emergency and during mobilization. (Source: Joint Pub 4-01)

In addition to these programs, the Department of Transportation's Maritime Administration (MARAD) has an agreement with the U.S. maritime industry to obtain additional tanker capacity when emergency situations result in shortfalls.

Voluntary Tanker Agreement (VTA) – An agreement established by the Maritime Administration to provide US commercial tanker owners and operators to voluntarily make their vessels available to satisfy the Department of Defense needs. It is designed to meet contingency or war requirements for point-to-point petroleum, oil and lubricants movements, not to deal with capacity shortages in resupply operations. (Source: Draft Joint Pub 4-01.2)

C. LINES OF COMMUNICATION

The foundation upon which the U.S. military force projection capability is based are lines of communication (LOC) defined as:

Lines of Communication – All the routes, land, water, and air, which connect an operating military force with a base of operations and along which supplies and military forces move. (Source: Joint Pub 1-02)

1. Workloads of the Lines of Communication

Each LOC must be planned and tailored to support the unique military requirement established by the supported geographic combatant commander – or the Commander of a Joint Task Force (CJTF) – to accomplish his command's assigned mission. The requirements that the LOC must satisfy include three broad categories of personnel and materiel workloads that flow between the base of operations and the area of operations: (1) the flow of units, (2) the flow of sustainment, and (3) the retrograde flow.

The principal workload during the early entry phase of the LOC operation is the flow of military units into the operational area. Units may move through the LOC as complete groups – unit personnel, unit equipment, and accompanying supplies – to accomplish tactical missions immediately upon arrival. This type of deployment usually occurs when forced entry is required or anticipated. Units also may move from origins to

destinations as separate increments of passengers and cargo to be assembled into units after they arrive in the operational area. This method of deployment is typically used after forced entry has been successfully completed or in situations when forced entry is not required.

The second workload of concern to LOC operations is the flow of sustainment. This flow begins with the deployment of the first person into the theater and ends with the redeployment of the last person from the theater. It includes non-unit related personnel and cargo needed to sustain the force and enable it to carry out its mission.

The third workload which the LOC must accommodate is the flow of retrograde personnel and cargo. This workload may include personnel flows such as noncombatant evacuees, medical evacuees, or prisoners of war, and other flows such as human remains, mail, damaged equipment of the force or captured enemy materiel.

2. Physical Composition of the Lines of Communication

The LOC supports the deployment, employment, and sustainment of the forces conducting an operation, as well as the redeployment of the forces and materiel when the operation is concluded. The functions and activities necessary to operate the LOC are performed by organizations that may be military, civilian, or a combination thereof. The organizations use existing infrastructure that typically is controlled by host nation military or civilian authorities. The definitions of the general term "infrastructure" and the more specific term "facilities" follow:

Infrastructure – A term generally applicable to all fixed and permanent installations, fabrications, or facilities for the support and control of military forces. (Source: Joint Pub 1-02)

Facility – A real property entity consisting of one or more of the following: a building, a structure, a utility system, pavement, and underlying land. (Source: Joint Pub 1-02)

Because joint RSOI and sustainment operations are military functions overlaid upon existing infrastructure and facilities, the use of these resources by a supported combatant command must be coordinated with the host nations, the appropriate national, state, or local authorities within the United States or its possessions, the supporting combatant commands, and any allied military or civilian organizations that participate in the deployment operation.

The LOC contains routes that connect the military force with its base of operations. A route is defined as follows:

Route – The prescribed course to be traveled from a specific point of origin to a specific destination. (Source: Joint Pub 1-02)

The LOC usually includes several routes specifying both direction and the mode of transport for the flows. The terms node and link are introduced to add a consistent level of precision to the routes that interconnect to form a network established as the LOC. A node is currently defined as follows:

Node – A location in a mobility system where a movement requirement is originated, processed for onward movement, or terminated. (Source: Joint Pub 1-02)

Proposed definitions for these terms are as follows:

Node – The infrastructure and facilities designated by the combatant command as part of the lines of communication where a movement requirement is originated, processed for onward movement, or terminated. A node is defined by: (1) a geographic location, (2) one or more functions to be performed at the location, and (3) the end points of links connecting it with other nodes. (Source: redefined from Joint Pub 1-02)

Link – A segment of the route designated by the combatant command as part of the lines of communication. A link is defined by: (1) the two nodes it connects, (2) the mode of transport, and (3) the useable military capacity of the link. (Source: Stipulated)

Within a combatant command's AOR, certain nodes and links will form primary routes over which much of the command's required flows will pass. Such a route is defined as a main supply route:

Main Supply Route – The route or routes designated within an area of operations upon which the bulk of traffic flows in support of military operations. (Source: Joint Pub 1-02)

3. Organizations that Operate Lines of Communication

There are three essential organizational elements needed to allow the LOC to operate in accordance with the combatant commander's specified requirements: (1) node operators, (2) mode operators, and (3) movement controllers.

Node Operators – Organizations that operate the nodes of the lines of communication, performing the tasks necessary to facilitate the flows of supplies and military forces through the LOC. These organizations may be composed of military or civilian personnel or any combination thereof. (Source: Stipulated)

Mode Operators – Organizations that operate common-user lift resources (highway, rail, airlift, sealift, inland waterway, and intracoastal transportation resources) to transport military requirements between the

nodes of the lines of communication. These organizations may be military or civilian, including host nation resources, or any combination thereof. (Source: Stipulated)

Movement control is defined as follows:

Movement Control – The planning, routing, scheduling, and control of personnel and supply movements over lines of communication; also, an organization responsible for these functions. (Source: Joint Pub 1-02)

While this definition adequately summarizes the process, the following definition more fully articulates the complexity:

Movement Control – Movement control is the planning, routing, scheduling, and controlling of common-user assets, and maintaining of intransit visibility to assist commanders and operations staffs in force tracking. It also includes reception and onward movement of personnel, equipment, and supplies over lines of communications in accordance with command directives and responsibilities. Movement control is a system involving the coordination and integration of movement information and spanning all levels of operations. (Source: Joint Pub 4-01.3)

Another term, traffic management, is used to define the management of movements performed for the military forces by commercial mode operators.

Traffic Management – The direction, control, and supervision of all functions incident to the procurement and use of freight and passenger transportation services. (Source: Joint Pub 1-02)

Movement control usually occurs during exercises and contingency or wartime operations when personnel and supply movements flow through a LOC. Traffic management is accomplished in peacetime to achieve lower transportation costs, but may continue during contingency or wartime operations.

Movement Controllers – Organizations that plan, route, schedule, procure transportation services, and control movements through the lines of communication. These organizations control the flows of supplies and military forces between the nodes of the lines of communication in accordance with the priorities established by the supported combatant commander. (Source: Stipulated)

The overall coordination of movements between the nodes of the LOC, over the links, using the available lift resources, normally is exercised by the Joint Movement Center (JMC) in accordance with joint U.S. doctrine. During combined operations, U.S. movements also will be coordinated with the Allied Command Europe Mobility Coordination Center (AMCC) during contingencies in the NATO area, the Combined Movement Center (CMC) in South Korea during operations in that area, or an established combined movement control center established in other regions. The JMC is established

by and coordinates movements based on priorities set by the supported combatant commander.

The movement control system must balance the capabilities of the nodes and modes with the commander's priorities. To accomplish this it must exchange information and give direction to minimize congestion and vulnerability. The generic information flows among these organizations is depicted in Figure II-1.

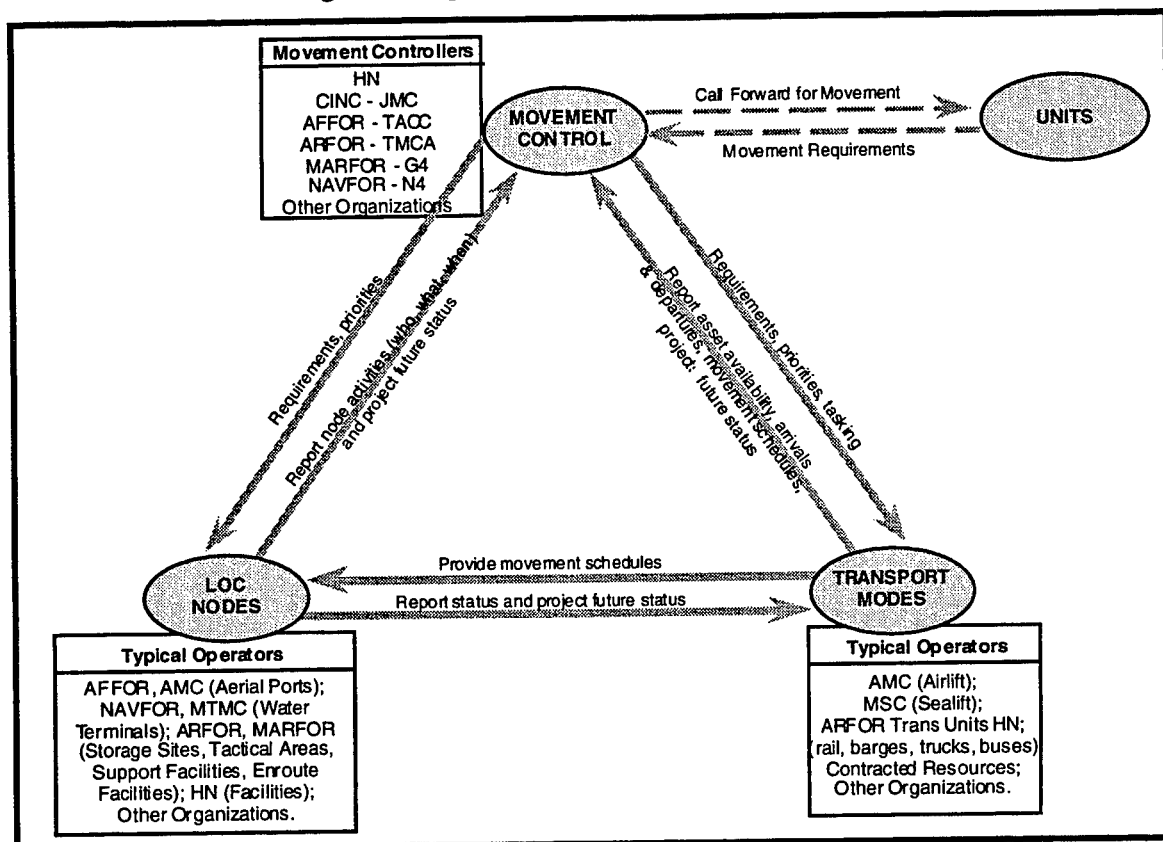


Figure II-1. Theater Relationships Between Movement Controllers and Mode and Node Operators

4. Segments of the Lines of Communication

Responsibilities for planning and operating various segments of the LOC typically devolve to different combatant commanders. The LOC can be represented as four interconnected segments based on these responsibilities as shown in the Figure II-2 below. One segment (the CONUS LOC) is the responsibility of the "providing" combatant command (U.S. Atlantic Command or, in some contingencies, another geographic combatant command), two (the Air and Sea LOC or ALOC/SLOC) are the responsibility of the supporting functional combatant command (U.S. Transportation

Command), and the final segment (the theater LOC) – usually the most restrictive – is the responsibility of the supported geographic combatant command.

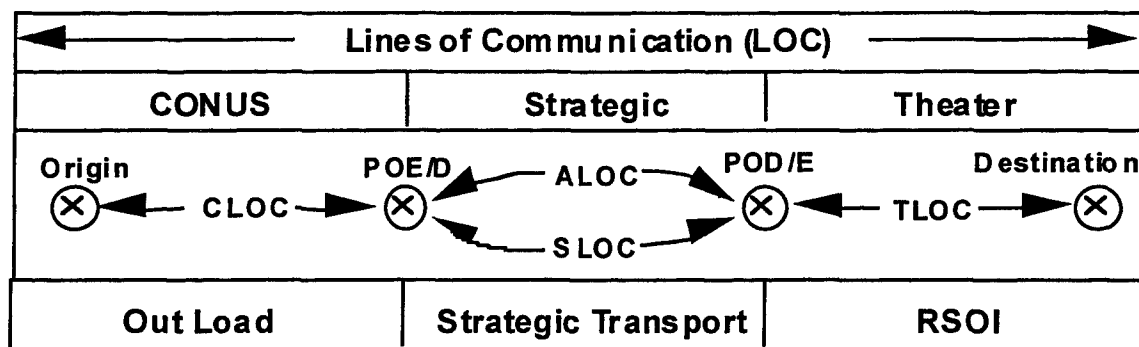


Figure II-2. Segments of the Lines of Communication

Embedded within the LOC are critical interfaces between combatant commands where responsibilities must be clearly understood and workloads must be coordinated. These responsibilities and procedures are normally documented in Command Arrangement Agreements (CAAs) between U.S. Transportation Command (USTRANSCOM) and the other combatant commands. In unique situations where the AORs of a geographic supporting and supported combatant command are contiguous, the LOC may not require strategic segments and the CAA between the two commands should document the procedures at the interfaces.

The first segment of the LOC is the responsibility of the providing geographic combatant command in coordination with USTRANSCOM, other functional commands, and the host nation. When the flows of units and sustainment originate in the continental United States (CONUS) and deploy to another geographic combatant command's AOR, this segment extends from the peacetime origin to ports of embarkation where the resources will be moved onward by strategic airlift or sealift. This segment of the LOC also must be coordinated with Service organizations, defense agencies, and appropriate civil authorities.

Between the supporting and providing combatant commands, and the supported combatant command's areas of responsibility, the LOC usually has two strategic segments defined by mode of transport. These segments extend from the designated ports of embarkation to the designated ports of debarkation. These segments of the LOC are the responsibility of the functional combatant command – U.S. Transportation Command – in coordination with both the providing and supported combatant commands, and the host nations through which the segments pass. Proposed

modifications to existing definitions of Air Lines of Communication and Sea Lines of Communication that take into account command responsibilities follow.

Air Lines of Communication (ALOC) – Air routes, *designated by U.S. Transportation Command in coordination with the providing and supported combatant commands and the host nations through which the routes pass*, that connect an operating military force with a base of operations. (Source: adapted from Joint Pub 1-02)

Sea Lines of Communication (SLOC) – Sea routes, *designated by U.S. Transportation Command in coordination with the providing and supported combatant commands and the host nations through which the routes pass*, that connect an operating military force with a base of operations. (Source: adapted from Joint Pub 1-02)

These segments of the LOC usually connect the embarkation location with the debarkation location. In some cases, however, the segment may connect origins and final destinations directly; for example, when a squadron of aircraft (all unit personnel, equipment, and accompanying supplies) deploys from one air base in the CONUS directly to an overseas air base from which the squadron performs its mission. When direct deployment between origin and destination is anticipated, the providing and supported combatant commands share responsibility for planning and operating these segments and coordinating their actions with the appropriate host nations.

The final segment of the LOC is within the supported combatant commander's area of responsibility.

Theater Lines of Communication – The links (route segments) and nodes (infrastructure and facilities) within the joint rear area² of the theater of operations designated by the supported geographic combatant command, in coordination with the host nation, U.S. Transportation Command, and allied organizations to support the deployment, employment, sustainment, and redeployment of assigned forces and retrograde requirements. (Source: Stipulated)

In some situations, the Theater LOC can serve the same purpose as the CONUS LOC segment when forward stationed forces are deployed elsewhere within the same theater or to another theater. In a contingency, such as Operation Joint Endeavor, major operational deployments by land, sea, and air were required within the same theater. In these situations, the providing command's segment of the LOC extends from peacetime origins to designated locations, agreed to by the providing and supported combatant

² **Joint Rear Area** - A specific land area within a joint force commander's area of operations designated to facilitate protection and operation of installations and forces supporting the Joint Force. (Source: Joint Pub 1-02)

commands (or allied command), where transfer of authority over the forces passes between the commands.

D. THE THEATER LINES OF COMMUNICATION

When units or non-unit personnel and materiel are deployed into a theater in other than a forced entry operation, they normally undergo some portion of the four processes – reception, staging, onward movement, and integration (RSOI) – defined below.

Reception Process – The process of unloading personnel and materiel from strategic transport, marshaling the deploying units, transporting them to staging areas if required, and providing life support³ to deploying personnel. (Source: Stipulated)

Staging Process – The process of assembling, holding, and organizing arriving personnel and materiel into units and forces, and preparing them for onward movement and combat operations; providing life support for personnel until units become self-sustaining; and assembling, holding, and organizing arriving sustaining materiel for onward movement. (Source: Stipulated)

Onward Movement Process – The process of moving units and accompanying materiel from reception facilities and marshaling or staging areas to tactical assembly areas or other theater destinations; moving arriving non-unit personnel to gaining commands; and moving arriving sustainment materiel from reception facilities to distribution sites. (Source: Stipulated)

Integration Process – The processes of effecting the transfer of authority over units and forces to a designated component or functional commander for employment in the theater of operation. (Source: Stipulated)

The reception process of joint RSOI for the elements of the deploying force take place at a facility where the military personnel, equipment and/or supplies (flows) enter the theater LOC. The most descriptive term for the type of facility where this operation occurs is the one used by the commercial transportation industry, a "terminal," which is defined as follows:

Terminal – Either end of a carrier line (as railroad, trucking or shipping line, or airline) with classifying yards, dock and lighterage facilities, management offices, storage sheds, and freight and passenger stations. (Source: Webster's)

The military functions performed at the terminal are defined as follows:

³ **Life Support** - The provision of food, water, shelter, and emergency medical treatment to military or civilian personnel. (Source: Stipulated)

Terminal Operations – The reception, processing, and staging of passengers; the receipt, transit storage and marshaling of cargo; the loading and unloading of ships or aircraft; and the manifesting and forwarding of cargo and passengers to destination. (Source: Joint Pub 1-02)

Two additional activities, marshaling and staging, are introduced in this definition. The term marshaling, however, currently has two meanings for activities that occur during military operations along a LOC.

Marshaling – 1. The process by which units participating in an amphibious or airborne operation group together or assemble when feasible or move to temporary camps in the vicinity of embarkation points, complete preparations for combat, or prepare for loading. 2. The process of assembling, holding, and organizing supplies and/or equipment, especially vehicles of transportation, for onward movement. (Source: Joint Pub 1-02)

The following proposed definition is intended to express more accurately the concept of marshaling envisioned during joint RSOI and sustainment operations and is recommended as a replacement for the second part of the current definition:

Marshaling – 2. The activities during deployment operations that assemble and prepare for onward movement arriving (a) unit personnel, equipment, and accompanying supplies; (b) non-unit related personnel; or (c) non-unit related cargo. Marshaling is the last activity in the reception process. (Source: Stipulated)

During deployment operations, a unit reserves airlift or sealift in the time-phased force and deployment data (TPFDD) supporting the operation. The unit is uniquely identified by a unit identification code (UIC). Its movement requirements are identified in the TPFDD as one or more unit line numbers (ULNs). Separate ULNs are used when the parts of the unit are routed independently between the unit's origin and its destination. When this separation occurs, the commander of the unit retains command, but control of the unit's resources depends on the movement control system. The separately arriving parts of the deploying unit – passengers and cargo – must be reassembled in the new theater of operations. The marshaling activities include reassembling of all ULNs into the UIC. When marshaling is completed, control of the unit reverts to its commander.

Small units deploying as a single ULN with all personnel, equipment, and accompanying supplies on the same aircraft, do so under the command and control of the unit commander and will marshal at the arrival terminal. Once they have marshaled, they may perform their mission at that location or arrange for onward movement to the assigned final destination within the new theater where the mission will be accomplished.

The supported combatant commander assumes COCOM for arriving units assigned to his command at a point designated in the operation plan. He must ensure the arriving unit is integrated into the force. Integration is accomplished by transferring the appropriate authority for the unit to the designated gaining command. Some units are designated as an integral part of a major force such as a division, brigade, or regiment. These units will be required to undergo the staging process described below. Command authority for units not designated as elements of a major force will be transferred by the combatant commander to commanders of subordinate joint functional or Service component commands.

The term staging also has two military definitions, but only one relates to joint RSOI operations. This term, defined below, applies only to troops and could be viewed as a more general description of the first definition of marshaling.

Staging – 2. To process, in a specified area, troops which are in transit from one locality to another. (Source: Joint Pub 1-02)

The proposed definition for staging includes a revised part two and a new part three. It addresses both forces – units assigned to major combat formations such as a division, brigade, or regiment – and sustainment. Part two conveys three essential force-related activities: (1) the need to assemble multiple units into a force, (2) the need to prepare the units of the force to conduct their combat missions, and (3) the need to prepare the force for onward movement and subsequent integration into the theater operation. Part three of the proposed definition addresses processing non-unit sustainment or retrograde personnel and materiel.

Staging – 2. Assembling, holding, and organizing arriving units and personnel and materiel into forces and preparing them for onward movement and combat operations. 3. Assembling, holding and processing arriving non-unit sustaining personnel and materiel for onward movement, or personnel and materiel for retrograde from the theater of operations. (Source: Stipulated)

If the proposed changes in marshaling and staging are accepted, Terminal Operations should be redefined as follows to reflect these differences and to account for other modes of transport:

Terminal Operations – The reception, processing, and *marshaling of unit and non-unit* passengers; the receipt, transit storage and marshaling of cargo; the loading and unloading of ships, aircraft, *or other vehicles*; and the manifesting and forwarding of cargo and passengers to destination. (Source: Joint Pub 1-02 as modified)

The modified definition identifies the functions performed at a terminal, independent of the location, the type of flow that is processed at the location, or the direction of the flow.

There are, however, two types of terminals where reception activities are conducted within a theater of operations. Because they are nodes in the theater LOC established to support the military force, they should be defined by the facility (airfield or berths, piers, etc. and implicitly the transportation mode the facility serves), the functions performed (terminal operations), and the organization (military and/or civilian) that accomplishes the work. The current definition of an air terminal follows:

Air Terminal – A facility on an airfield that functions as an air transportation hub and accommodates the loading and unloading of airlift aircraft and the intransit processing of traffic. The airfield may or may not be designated an aerial port. (Source: Joint Pub 1-02)

A simpler and more accurate definition encompassing the location, functions, and organizations that operate an air terminal might be as follows:

Air Terminal – The facilities on an airfield where organizations conduct terminal operations involving airlift supporting military forces. (Source: Stipulated)

The current definition of water terminal, provided below, identifies the locations and facilities, but does not include the important functions of loading and unloading ships.

Water Terminal – A facility for berthing ships simultaneously at piers, quays, and/or working anchorages, normally located within sheltered coastal waters adjacent to rail, highway, air, and/or inland water transportation networks. (Source: Joint Pub 1-02) Water terminals are further categorized by physical facilities (fixed, unimproved, and bare beach); commodities handled (ammunition, POL, general cargo); and methods for handling cargo (container, RoRo, general cargo, lighterage). (Source: Joint Pub 4-01.5)

This term should be redefined to include strategic sealift and intercoastal or inland waterway transport, and terminal operations. It is intended to parallel the proposed term for air terminal and is defined as follows:

Water Terminal – The facilities where ships, lighters, or barges are berthed or anchored and organizations conduct terminal operations supporting military forces. (Source: Stipulated)

A large number of air and water terminals might be used for military operations. These operations can include support for joint or combined forces, or they may only

involve support for a single Service. Within the existing set of terms, there is a definition that distinguishes an air terminal when it is used for sustained military operations. When the facility is designated for sustained air movement operations, it also becomes an authorized port of entry (POE) or port of departure (POD) for the country in which it is located. Currently, the authority to designate an aerial port under provisions of Air Force Regulation 76-7 (also AR 59-105, OPNAVINST 4630.13D, and MCO 4660.2) is the Chief of Staff Air Force. An air terminal becomes an aerial port when it conforms to the following definition:

Aerial Port – An airfield that has been designated for the sustained air movement of personnel and materiel, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Joint Pub 1-02)

With slight modification, the definition would provide additional clarity as to location, function, and necessary coordination for use of the facilities. Moreover, this definition would eliminate the potential for confusion when modifiers such as port of entry (POE), port of embarkation (POE), port of departure (POD), and port of debarkation (POD) are included in definition. The proposed definition follows:

Joint Aerial Port – *A joint use air terminal and other infrastructure that have been designated by the supported combatant command, in coordination with the host nation and the U. S. Transportation Command, for the sustained air movement of personnel and materiel, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Joint Pub 1-02 as modified)*

A similar definitional distinction does not exist for "Water Port" in available publications. Another approved term is used, however, to further describe a location where terminal operations are conducted for more than one Services' requirements and when the terminal is operated by the Military Traffic Management Command. This term is defined as follows:

Common-User Ocean Terminal – A military installation, part of a military installation, or a commercial facility operated under contract or arrangement by the Military Traffic Management Command which regularly provides for two or more Services' terminal functions of receipt, transit storage or staging, processing, and loading and unloading of passengers or cargo aboard ships. (Source: Joint Pub 1-02)

To achieve a parallel structure with aerial port, a definition of Joint Water Port is proposed:

Joint Water Port – *A joint use water terminal and other infrastructure that have been designated by the supported combatant command, in*

coordination with the host nation and the U. S. Transportation Command, for the sustained sea movement of personnel and materiel, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Stipulated)

When a single Service conducts terminal operations for its temporary or sustained use, the facilities where these functions occur are designated as Service component air or water terminals, but the terminal is usually only one of several other functions that also may occur at the same site. The location should be designated by its other name (e.g., main base, collocated operating base, advanced logistic support site, etc.). The Service component terminals also must be authorized as direct entry or departure ports by the host nation. Proposed definitions for the two types of terminals operated by a Service component are as follows:

Service Air Terminal – An air terminal and other infrastructure that has been designated by the supported combatant command, in coordination with the Service component command, the host nation and the U. S. Transportation Command, for the temporary or sustained air movement of personnel and materiel of a Service component, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Stipulated)

Service Water Terminal – A water terminal and other infrastructure that has been designated by the supported combatant command, in coordination with Service component command, the host nation and the U.S. Transportation Command, for the temporary or sustained sea movement of personnel and materiel of a Service component, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Stipulated)

These nodes serve as the end points of the theater LOC segments and the locations where the principal interfaces between combatant commands occur. It is important to note that U.S. operations within Joint Air and Water Terminals are functions normally performed by elements of U.S. Transportation Command. A number of other joint RSOI functions occur in the vicinity of the Joint Air and Water Terminals, and these functions are the responsibility of the supported geographic combatant command. If the definition of air and water terminal and terminal operations are adapted for military use, they should help to clarify the interface between U.S. Transportation Command and the geographic combatant commands. Moreover, within the framework of the proposed definitions, the designating authority for Joint Aerial Ports, Joint Water Ports, and Service Air and Water Terminals should be the appropriate geographic combatant commander, in coordination with the other commanders and host nation authorities.

E. SUPPORTING NODES OF THE THEATER LOC

A theater LOC must be established to connect the deployed force with the points of entry into the theater of operations. In special situations where forced entry is required, tactical sites will be established as the points of initial entry for a combat force. These sites are defined as follows:

Airhead – 1. A designated area in hostile or threatened territory which, when seized and held, ensures the continuous air landing of troops and materiel and provides the maneuver space necessary for projected operations. Normally it is the area seized in the assault phase of an airborne operation. 2. A designated location in an area of operations used as a base for supply and evacuation by air. (Source: Joint Pub 1-02)

Beachhead – A designated area on a hostile or potentially hostile shore that, when seized and held, ensures the continuous landing of troops and materiel, and provides maneuver space requisite for subsequent projected operations ashore. (Source: Joint Pub 1-02)

Subsequent military operations in these situations usually will require air and water terminals to be established as well as a number of other supporting nodes to increase the size and capabilities of the force and to sustain it while engaged in combat. When forced entry is not required, the theater LOC nodes will be established and then the RSOI operation will be executed. There are several types of supporting nodes that may be established within the theater LOC to accomplish RSOI, sustainment, and retrograde operations.

Supporting Nodes – Designated locations along the lines of communication where functions supporting and facilitating deployment and sustainment of the force, or retrograde operations, are conducted. (Source: Stipulated)

Supporting nodes are grouped by the type of activities they perform. They include: Holding Areas; Unit RSOI Processing Areas; Transshipment and Intermodal Transfer Points; Enroute Support Sites; and Unit, Force, and Sustainment Destinations. In some cases, many activities will be performed at a single location and these nodes are grouped into complexes. Each of these node types is discussed in the sections that follow. The designating authorities for these nodes must take into account the essential facility and infrastructure characteristics, and the footprint of both the node operating organization at the location and the deployment and/or retrograde flows planned for the nodes.

1. Holding Areas

Holding Area – A designated location along the theater lines of communication established for temporarily holding and processing personnel or materiel while awaiting onward movement or retrograde transport. (Source: Stipulated)

There are five holding areas that support various classes of personnel and five that handle materiel.

a. Personnel Holding Areas

Aeromedical Evacuation Holding Area (AEHA) – A facility on or in the vicinity of air bases or air terminals designated by the combatant command, in coordination with the Global Patient Regulating Center (GPRC), for temporarily holding patients and medical crews awaiting aeromedical evacuation from the area of operations. Life support and medical support will be provided to patients and crews in the holding area by the supported combatant command. (Source: Stipulated)

Air Terminal Personnel Holding Area (ATPHA) – A site in the vicinity of an air terminal designated by the commander of a Joint Aerial Port Complex, in coordination with the host nation, where life support is provided to arriving military personnel of deploying units or non-unit related military personnel and civilian personnel while awaiting onward movement to final destination. (Source: Stipulated)

Driver Holding Area (DHA) – A site in the vicinity of a water terminal designated by the commander of a Joint Water Port Complex, in coordination with the host nation, where life support is provided to drivers of deploying units while awaiting arrival of unit equipment by sealift. (Source: Stipulated)

Enemy Prisoner of War Holding Area (EPWHA) – A location in the vicinity of an air or water terminal designated by the commander of a Joint Aerial or Joint Water Port Complex where prisoners of war are secured temporarily and provided life support while awaiting transportation from a theater of operations. The commander designating the location will coordinate the use of the facilities with the host nation and the command exercising control over the prisoners. (Source: Stipulated)

NEO Holding Area (NHA) – A location in the vicinity of an air or water terminal, designated by the American Ambassador, where security and life support are provided to authorized noncombatant personnel while awaiting onward movement to final destination. (Source: Stipulated)

b. Materiel Holding Areas

The theater LOC will usually have five types of holding areas where materiel is stored temporarily or processed during RSOI operations. These areas may be located within RSOI complexes or at various sites along the theater LOC.

Cargo Holding/Handling Area (CaHA) – A designated location for temporarily holding (1) arriving cargo until onward movement to the consignee can be arranged, (2) departing cargo until strategic transportation can be arranged, or (3) where cargo pallets are built or broken down. Cargo holding/handling areas are designated by the commander of the facility, in coordination with the host nation and the Joint Movement Center. (Source: Stipulated)

Container Holding/Handling Area (CoHA) – A designated location for temporarily holding (1) arriving containers until onward movement to the consignee can be arranged, (2) departing containers until strategic transportation can be arranged, or (3) where containers are loaded or unloaded. Container holding/handling areas are designated by the commander of the facility, in coordination with the host nation and the Joint Movement Center. (Source: Stipulated)

Frustrated Cargo Holding Area (FCHA) – A designated location for temporarily holding frustrated cargo until onward movement instructions can be clarified. Frustrated cargo holding areas may be designated by the commander of the facility, in coordination with the host nation and the Joint Movement Center. (Source: Stipulated)

Prepositioned Equipment Site (PES) – A site designated by a geographic combatant command, in coordination with the host nation and Service component, where war reserve materiel is stored and maintained for use by the command during a contingency or exercise. This materiel is usually configured as unit sets and may be maintained by U.S. military and civilian personnel, contractors, or host nation personnel. (Source: Stipulated)

Prestock Supply Point (PSP) – A site designated by a combatant command, in coordination with the host nation and Service component, where stocks of essential materiel needed to replenish accompanying supplies or to sustain units during deployment and military operations are stored. (Source: Stipulated)

2. Unit RSOI Processing Areas

Units deploying to a theater of operations will usually arrive as passengers and cargo. The unit RSOI processing areas of the theater LOC are locations where essential activities take place to reassemble the passengers and cargo into units and to prepare them for their operational missions. In these areas, sub-elements of units represented as Unit Line Numbers (ULNs) in the Time Phased Force and Deployment Data (TPFDD) and moved independently during the deployment are merged together to reform the unit. When this occurs, the commander of the unit can once again assume control of the unit. In cases where a unit is part of major combat formation such as a division, brigade, or regiment, it will be staged with other units assigned to the major combat formation so the

force commander can assume control and appropriate transfer of authority over the force can take place.

The first unit processing areas reassemble drivers and helicopter crews with their vehicles and prepare them for onward movement.

Vehicle Assembly Area (VAA) – An area designated by the commander of a joint reception complex, in coordination with the host nation and any allied commands using the same facility, where unit drivers and vehicles are assembled and prepared for onward movement by convoy, by rail, or theater airlift. (Source: Stipulated)

Convoy Assembly Area (CAA) – An area in the vicinity of a reception terminal designated by the commander of a joint reception complex, where arriving unit equipment and personnel are assembled for onward movement in convoys to intermediate or final destinations. The commander designating the location will coordinate the use of the facilities with other allied commands using the facility and the host nation. (Source: Stipulated)

Helicopter Assembly Area (HAA) – An area designated by the commander of a joint reception complex, in coordination with the host nation and any allied commands using the same facility, where helicopters are assembled and prepared for flight, test flown, and from which they are flown, with crews, to the helicopter marshaling area. (Source: Stipulated)

The next group of unit processing areas comprises those where entire units are reassembled (all ULNs of the unit) or self-deploying helicopter ULNs are assembled, and the unit commanders assume control over the unit.

Marshaling Area (MA) – A designated location in the vicinity of a reception terminal or prepositioned equipment site where all arriving unit personnel, equipment, and accompanying supplies are reassembled, returned to the control of the unit commander, and are prepared for onward movement. The supported combatant command designating the location will coordinate the use of the facilities with the host nation, Service components, and other allied commands, and will provide life support to the units while in the marshaling area. (Source: Stipulated)

Helicopter Marshaling Area (HMA) – The first location where deploying helicopters are flown from the Helicopter Assembly Area. The helicopters are refueled, armed (if required), provided limited maintenance, returned to the control of the unit commander, and prepared for tactical or administrative onward movement to subsequent destinations within the theater. This area also is the initial arrival location in the theater for self-deploying helicopters. The area is designated by the supported combatant command, in coordination with the host nation and the appropriate Service components. (Source: Stipulated)

Units assigned to major combat formations will undergo staging, additional processing needed to reassemble all units assigned to the formation, prepare them for combat operations, and onward movement and integration into the theater operation.

Staging Area (SA) – A location designated by the supported combatant command, in coordination with the host nation, Service component, and allied organizations, where units are staged. The staging area will provide necessary facilities, sustainment, and other support to enable the major combat formation to achieve readiness for combat operations. (Source: Stipulated)

3. Transshipment and Intermodal Transfer Points

Between the reception nodes and the final destinations, the theater LOC typically will have a number of nodes where transshipment or intermodal transfer operations occur.

Transshipment and Intermodal Transfer Points – Designated locations along the theater lines of communication where materiel is processed and transferred between vehicles, or personnel or materiel are unloaded from one mode of transport and loaded onto another mode of transport for onward movement. (Source: Stipulated)

There are eight different types of nodes where transshipment or intermodal operations are conducted.

Air Freight Terminal – A facility that provides administrative functions and space for in-transit storage; the receipt and processing of originating, terminating, and in-transit air cargo; and the marshaling, manifesting, and forwarding of air cargo to destination of either domestic or overseas bases. (Source: AFM 11-1)

While the definition of an air freight terminal exists, it appears to be a more limited definition of air terminal and is probably not needed if the definition of air terminal is approved.

Air-to-Air Interface Site (AAIS) – The location at an air terminal where personnel and/or materiel arriving by either strategic or theater airlift are transferred to the other airlift mode for onward movement to an intermediate or final destination. The site will be designated by the supported combatant command, in coordination with the host nation, U.S. Transportation Command, and Service components. (Source: Stipulated)

The existing definition of breakbulk point is as follows:

Breakbulk Point – A transshipping activity to which unitized shipments for various consignees are consigned and from which the shipments are distributed as separate shipment units to the ultimate consignee. (Source: DoD 4500.32-R)

The following modified definition is proposed:

Breakbulk Point (BBP) – A location where unitized shipments for various consignees are consigned *for processing into* separate shipments for onward movement to the ultimate consignee. *The commander designating the breakbulk point location will coordinate the use of the facilities with the host nation.* (Source: Adapted from DoD 4500.32-R)

First Destination Reporting Point (FDRP) – The first highway regulating point encountered by convoys departing Joint Aerial and Water Port Complexes, and the point where tactical control (TACON) of the personnel, materiel, or units passes from the complex commander to the movement control system. (Source: Stipulated)

POL Transfer Point (PTP) – A location where bulk POL can be transferred between two modes. (Source: Stipulated)

Railhead (RH) – A point on a railway where loads are transferred between trains and other means of transport, and the point where tactical control of the personnel, materiel, or units passes to or from the node commander to the movement control system. (Source: adapted from Joint Pub 1-02)

Sea-to-Air Interface Site (SAIS) – The location at an air terminal, in close proximity to a Joint Water Port, where unit personnel and equipment and/or non-unit related cargo is transloaded from strategic sealift to theater airlift for onward movement to destinations along the theater lines of communication. The site will be designated by the supported combatant command, in coordination with the host nation and U.S. Transportation Command. (Source: Stipulated)

Trailer Transfer Point (TTP) – Locations established along the lines of communication by the joint (or combined) movement center, in coordination with the host nation, to support line haul operations. Loaded or unloaded trailers are received, segregated, assembled, and dispatched at the point in accordance with priorities established by the joint movement center. The site normally provides emergency refueling, recovery, and maintenance support. (Source: Stipulated)

Transshipment Point (TSP) – A location where materiel is transferred between vehicles. (Source: Joint Pub 1-02)

4. Enroute Support Sites

Two enroute support sites normally will be established along the theater lines of communication, one to support aircraft and one to support surface movements. Aircraft enroute sites also may be located along the strategic leg of the ALOC.

Aircraft Enroute Support Sites (AESS) – Sites designated by the supported combatant command, in coordination with the host nation, U.S. Transportation Command, Service components, and allied organizations,

that provide security, life support to transient air crews, services for aircraft and helicopters, and limited specialized maintenance for aircraft and helicopters. (Source: Stipulated)

Convoy Support Center (CSC) – Locations designated by the supported combatant command, in coordination with the host nation, Service components, and allied organizations, along the main supply routes that provide security, life support for drivers, fuel, limited maintenance support, and vehicle recovery. (Source: Stipulated)

5. Unit, Force, and Sustainment Destinations in the Theater LOC

Units and forces, and the personnel and materiel that sustain them, have assigned destinations in the theater LOC. These locations serve as the end points of the theater LOC and define where the completion of RSOI processing of units and forces will take place.

a. Unit and Force Destinations

Units that are not part of a major combat formation usually are assigned final destinations in the TPFDD. These locations in the theater LOC are the planned locations where the units will perform their operational missions. These locations also serve as the points where the units will transfer authority to their gaining command.

Final Destination (FD) – The destination designated in the time phased force and deployment data (TPFDD) by the supported geographic combatant command where a unit will complete RSOI processing, effect transfer of authority to its gaining command, and begin to perform its assigned mission. (Source: Stipulated)

If a unit is part of a major combat formation, it will reassemble with other units of the formation in the staging area and move onward under the command and control of the commander of the major combat formation to a Tactical Assembly Area (TAA) where transfer of authority will occur. The TAA is the final destination for units of a major combat formation.

Tactical Assembly Area (TAA) – A location designated by the supported combatant command, in coordination with the host nation and Service component, where a combat formation will transfer authority to its gaining command and from which it can be integrated into the force and be tactically employed. During combined operations, the TAA will be coordinated with the appropriate allied command. (Source: Stipulated)

b. Sustainment Destinations

Sustainment materiel arriving in a theater of operations is identified by cargo increment numbers (CINs) in the TPFDD. The sustainment materiel is consigned to logistic organizations located along the theater LOC. The sustainment destinations serve as the end point of the theater LOC where common-user transportation deliveries terminate or where the materiel is consumed. A supply support activity is the final destination for CINs in the theater LOC, independent of class of supply.

Supply Support Activity (SSA) – The final destination designated for cargo increment numbers (CINs) in the TPFDD representing non-unit resupply cargo (NRC) shipments. (Source: Stipulated)

Replacement personnel are identified by personnel increment numbers (PINs) in the TPFDD. The final destination for PINs will normally be the same location where a unit that processes replacement personnel is located. A Non-Unit Related Personnel Activity (NRPA) is the final destination for PINs in the theater LOC.

Non-Unit Related Personnel Activity (NRPA) – The final destination designated for personnel increment numbers (PINs) in the TPFDD for non-unit related personnel (NRP) movements. (Source: Stipulated)

6. RSOI Complexes

At some theater LOC locations, a number of related activities occur. Because of the interdependence of the activities occurring at the nodes, they are grouped together into a RSOI Complex. To achieve unity of effort, all node operating organizations within the complex should be placed under the operational control of a joint or Service complex commander, who also will serve as the base cluster commander when performing the rear area security mission. The various RSOI Complexes are defined as follows:

Naval Advanced Logistics Support Site (ALSS) – An overseas location *designated by the supported combatant command, in coordination with the host nation and the Service component*, used as the primary transshipment point in the theater of operations for logistic support. A naval advanced logistics support site possesses full capabilities for storage, consolidation, and transfer of supplies and for support of forward-deployed units (including replacement units) during major contingency and wartime periods. Naval ALSSs with port (*a Service water terminal*) and airfield facilities (*a Service air terminal*) in close proximity, are located within the theater of operations but not near the main battle areas, and must possess the throughput capacity required to accommodate incoming and outgoing intertheater airlift and sealift. When fully activated, the naval ALSS should consist of facilities and services provided by the host nation, augmented by support personnel located in

the theater of operations, or both. Also called naval ALSS. (Source: Adapted from Joint Pub 1-02)

Collocated Operating Base (COB) – An active or reserve allied airfield designated for joint, *combined*, or unilateral use by U.S. *contingency or* wartime augmentation forces or for wartime relocation of U.S. theater forces. Collocated Operating Bases are not U. S. bases. *A Service air terminal will usually be established at the base.* (Source: Adapted from AFM 11-1)

Contingency Operating Location (COL) – A host nation airfield, located within a contingency area of operations used to support air operations without establishing full support facilities. The base will be designated for use by the supported combatant command, in coordination with the host nation, Service components, and allied forces operating in the area. It may be used for temporary or extended operations, but will require support from a main operating base during extended operations. A Service air terminal will usually be established at the location. (Source: Stipulated)

Naval Forward Logistics Site (FLS) – An overseas location, *designated by the supported combatant command, in coordination with the host nation, Service component, and allies*, with port and airfield facilities nearby, which provides logistic support to naval forces within the theater of operations during major contingency and wartime periods. Naval forward logistic sites may be located in close proximity to main battle areas to permit forward staging of services, throughput of high priority cargo, advanced maintenance, and battle damage repair. Naval forward logistic sites are linked to in-theater naval advanced logistic support sites (ALSSs) by intratheater airlift and sealift, but may also serve as transshipment points for intertheater movement of high-priority cargo into areas of direct combat. In providing fleet logistic support, naval forward logistic site capabilities may range from very austere to near those of a naval advanced logistic support site. Also called **FLS**. (Source: Adapted from Joint Pub 1-02)

Intermediate Staging Base (ISB) – A group of nodes designated by a supported combatant command, in coordination with the host nation, U.S. Transportation Command, Service components, and allied commands, that supports U.S. Marine forces or airborne assault forces during preparation for amphibious or airborne assault forced entry operations. (Source: Stipulated)

Joint Aerial Port Complex (JAPC) – The group of nodes designated by the supported combatant command, in coordination with the host nation and U.S. Transportation Command, that includes a Joint Aerial Port and receives, processes, services, supports, and facilitates onward movement of personnel, materiel, and units deploying into, out of, or within a theater LOC by airlift. (Source: Stipulated)

Joint Water Port Complex (JWPC) – The group of nodes designated by the supported combatant command, in coordination with the host nation and U.S. Transportation Command, that includes a Joint Water Port and receives, processes, services, supports, and facilitates onward movement

of personnel, materiel, and units deploying into, out of, or within a theater LOC by sealift. (Source: Stipulated)

Main Operating Base (MOB) – An airfield located within a host nation, under the control of U.S. forces, that has a mature support organization, stores of war reserve materiel, and is capable of receiving and operating augmentation aircraft, supporting organizations, and non-unit materiel during contingency or wartime operations. The base will be designated for U.S. use by the combatant command, in coordination with the host nation, appropriate Service components, and U.S. Transportation Command. It will have a Service air terminal. The base may be required to provide support to designated collocated operating bases and contingency operating locations during military operations. (Source: Stipulated)

F. MAINTAINING VISIBILITY DURING A DEPLOYMENT

It is essential that the commanders, staff officers, and LOC operators maintain visibility over the flows while they are enroute. The information requirements of each vary based on the functions they perform. For example, the supported combatant commander must know where the forces and other capabilities are and when they can become operational. If changes to planned deployments are required, he must be able to determine rapidly how the flows can be redirected to the decisive location. Unit and force commanders also are concerned with identifying where all of their elements are and when they will be ready to transfer authority. Commanders of bases and clusters must know which military capabilities are available and where they are located so they can be employed to protect the force, if required.

Information collected and processed by staff officers and LOC operators enable them to implement the commander's instructions and priorities. Node operators need information on the *projected workloads* and *forecasted capabilities* of their organizations (including host nation, contractor, or allied support) to meet these requirements and to minimize bottlenecks and vulnerabilities during the operation. Similarly, mode operators need information on *projected workloads* and *planned capabilities* of available resources, particularly if these resources are part of the arriving flows. Logistic staffs need information that *anticipates sustainment requirements* and the *location and availability of resources* to meet the demands generated as the flows transit the LOC, and as the forces are employed. Movement controllers must balance the supported combatant commander's *movement requirements and priorities* against the *capabilities of the modes* to transport the flows (and *route capacities* when deploying on organic transport), and the *capacity of the nodes* to process the flows.

The Department of Defense has published an Intransit Visibility (ITV) Integration Plan to guide development of capabilities to provide information needed by the commanders, staff officers, and LOC operators during contingency deployment and employment operations. This plan contains a definition for Total Asset Visibility (TAV) focused on Defense materiel that is in storage, in process, and in transit. It currently does not include forces, which, for joint RSOI operations, is a principal concern of operational commanders. Changes to the definition are proposed as follows:

Total Asset Visibility (TAV) – The capability that permits operational and logistics managers to determine and act on timely and accurate information about the locations, quantity, condition, movement, and status of Defense *forces and* materiel. It includes *units at home station and while in transit until integration has been completed*, and the *materiel* assets that are in storage, in process, and in transit. (Source: Adapted from the Defense ITV Integration Plan)

The ITV Integration Plan also contains a separate definition for the term Intransit Visibility. This term includes both unit and non-unit passengers and cargo from origin to destination. The term applies to the information requirements of the combatant commanders, the components and Services, and the Defense agencies.

Intransit Visibility (ITV) – The ability to track the identity, status, and locations of DoD unit and non-unit cargo (excluding bulk petroleum, oils, and lubricants); passengers; medical patients; and personal property from origin to the consignee or destination by the CINCs, Military Services, or Defense agencies during peace, contingencies, and war. (Source: Defense ITV Integration Plan)

There is an approved definition for the term force tracking, but it is focused on units and their modes of transport to an objective area.

Force Tracking – The identification of units and their specific modes of transport during movement to an objective area. (Source: Joint Pub 1-02)

This definition is appropriate for forced entry operations, but lacks many of the attributes needed when applied to tracking forces during joint RSOI operations. A second part to the approved definition is proposed, intended to highlight which information must be collected and processed to accomplish force tracking during joint RSOI operations. The proposed addition to the definition follows and should be incorporated into the ITV Integration Plan so that emerging systems will be able to collect and process this information.

Force Tracking – 2. During force deployment operations, the process of gathering and maintaining information on the location, status, and predicted movement of each element (ULN) of a unit, including its

command element and separate increments of personnel, equipment, and accompanying supplies while the unit is in transit. Force Tracking also includes monitoring the elements until they are reassembled, the unit commander reestablishes command and control of the unit, and the unit becomes capable of sustaining itself, performing its assigned mission, and transfer of authority to its gaining command has been completed. If the unit is part of a force, Force Tracking continues until all of the units that make up the specified force have been reassembled, the force is ready to perform its assigned mission, and transfer of authority to the designated commander is effected. (Source: Stipulated)

Another term related to force tracking describes when the force is ready to perform its assigned mission in the new theater.

Force Closure – The point in time when a supported commander determines that sufficient personnel and equipment resources are in the assigned area of operations to carry out assigned tasks. (Source: Joint Pub 1-02)

In some contingencies, forces are forward stationed and may be required to conduct operations with resources that are already available. There also is a difference in meaning during planning and during execution. This definition should have two parts, one for planning and one for execution.

Force Closure – 1. During planning, the estimated point in time when deploying units of a specified force have arrived at the designated final destinations; completed reception, staging, onward movement, and integration processing; and are ready to conduct military operations. 2. During execution, the point in time when the commander of the deploying force declares to the supported combatant commander that his organization is ready to transfer authority and to carry out assigned tasks. (Source: Adapted from Joint Pub 1-02)

G. THEATER LOC COMMAND AND CONTROL ARRANGEMENTS

Command and control arrangements for the theater LOC are critical to ensure U.S. units, forces, and non-unit personnel and materiel are controlled during deployment operations. The combatant commander retains nontransferable COCOM of all assigned resources, described at the beginning of this chapter, but he will be required to delegate appropriate levels of command authority to subordinate commanders so that the operation can be accomplished with unity of effort in an effective and efficient manner.

There are two levels of command authority that normally are transferred to subordinate commanders by the combatant commander to ensure joint RSOI and sustainment of the force will be conducted effectively. These are Operational Control

(OPCON) and Tactical Control (TACON). The definitions of these terms and their application to joint RSOI operations follow.

Operational Control – Transferable command authority which may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in Combatant Command (command authority) and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations; normally this authority is exercised through the Service component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called OPCON. (Source: Joint Pub 1-02)

The theater LOC organizations may include one or more of the following organizations that will operate the nodes and the theater transportation modes: (1) assigned joint and Service component command elements, (2) elements of U.S. Transportation Command that will operate the joint and Service air and water terminals in the supported combatant command's AOR, (3) host nation civilian or military organizations, (4) contractor provided services, (5) and allied military or civilian organizations.

Currently, responsibilities for planning and operating the theater LOC is fragmented and distributed among Service components, USTRANSCOM, and several *ad hoc* committees, boards, or centers established during the contingency. This arrangement does not provide for unity of effort can these organizations ensure there is no duplication of effort. All U.S. military organizations that operate the theater LOC should be placed under the OPCON of a single commander who then can plan and direct the joint RSOI, sustainment, and retrograde operations for the combatant commander. This commander and his staff should ensure unity of effort, minimize duplication and overlapping activities in the theater LOC, protect the resources, and provide responsive and effective control of U.S. resources during the contingency or wartime operation. The staff and commander will supervise contracted support and coordinate U.S. operations with the host nation and any allied organizations operating in the same areas.

The second term, TACON, is a more limited form of control.

Tactical Control – The detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned. (Source: Joint Pub 1-02)

While deploying elements of units (passengers and cargo) and non-unit personnel are within the reception complexes, holding areas, and other nodes where RSOI processing occurs in the theater LOC, they should be placed under the TACON of the node commander. While elements of U.S. units and non-unit personnel and materiel are enroute between nodes of the theater LOC, they should be under the TACON of the movement control system established within the theater. These movements must be coordinated by the movement controllers with the local U.S. commanders assigned rear area protection responsibilities along the route of movement. When the deploying unit commander reassumes control of the various parts of his unit, the unit will remain under TACON of the node commander while located in the facility, and the commander will coordinate all movement requirements for the unit with the local U.S. movement control organization supporting the node. He also will ensure security of the unit while it is enroute. The transfer of authority effected at the destination places units or forces under the command of the gaining U.S. command or under the specified authority of an allied command.

Figure II-3 summarizes the proposed command and control relationships for the various elements operating the theater LOC or deploying through it during joint RSOI operations.

H. RECOMMENDATIONS

Doctrine establishes the fundamental principles to guide commanders and staffs at all echelons as they carry out actions in support of national objectives. Before joint doctrine can be prepared, however, it is essential to establish a common understanding of the processes the doctrine encompasses and the resources that are to be employed to accomplish the tasks. This chapter has proposed a comprehensive framework of terms that can provide the necessary foundation for developing joint RSOI doctrine, and integrating other existing or future joint doctrine with it. The proposed framework builds on terms that have already been adapted. It has suggested modifications to some of these terms, and where terms currently do not exist, has proposed definitions to make the framework more robust.

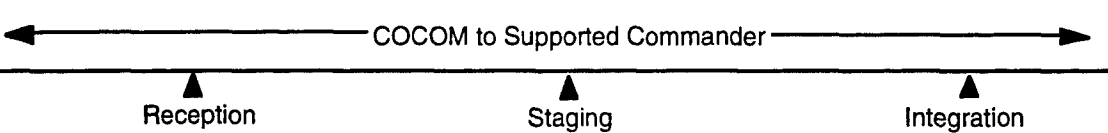
Element	Command and Control Arrangement		
Unit Line Numbers (ULN)	Command by Unit Commander, TACON to LOC Operators		Transfer of Authority (TOA) to Functional, Component, or Allied Command
Units		Command and Control by Unit Commander, TACON to LOC Operators	
Non-unit Related Personnel (NRP)	TACON to LOC Operators		
LOC Operators	U. S. Military Resources: OPCON to JTSC		
	Host Nation and Allied Organizations: Coordination by JTSC		
	Contractor Organizations: Contract Supervision by JTSC		
			
Reception			
Staging			
Integration			

Figure II-3. Proposed Command and Control Arrangements for Joint RSOI Operations

These terms should be reviewed by the combatant commands, their components, the Services, and the Defense agencies. Where additional modifications or new terms need to be defined, they should be incorporated into the framework and into Joint Pub 1-02.

USACOM should propose to the Deployment Process Special Action Group that the terms set forth in this chapter be reviewed by the combatant commands, components, Services, and Defense agencies. When this review is completed, the agreed changes should be incorporated by Joint Pub 1-02.

CHAPTER III

ORGANIZATIONS OF THE JOINT AND COMBINED THEATER LOC

III. ORGANIZATION OF THE JOINT AND COMBINED THEATER LOC

The Chairman's "Joint Vision 2010" establishes a template for conducting military operations in the future relying "on our ability to project power with the most capable forces, at the decisive time and place." If a supported combatant commander is to deploy and employ assigned forces effectively, he must organize and focus the available logistical resources to support the deployment and sustainment operations. This chapter discusses the responsibilities and authority of the combatant commander for assigned resources, and the need for unity of effort and tailored support forces to operate the theater LOC. Alternative theater-level organizational structures are proposed. The chapter also addresses the entities forming the three essential organizational elements of the theater LOC: node operators, mode operators, and movement controllers.

A. RESPONSIBILITIES AND AUTHORITY OF THE GEOGRAPHIC COMBATANT COMMANDER

Section 164 of Title 10 United States Code (10 USC) assigns responsibilities and establishes the authority of commanders of combatant commands. Simply stated, they are responsible for carrying out missions assigned by the NCA. The code grants them authoritative direction over all aspects of military operations, joint training, and logistics within their AOR. It also authorizes them to *organize* and *employ* commands and forces assigned to the command as they consider necessary to carry out the assigned missions. Although Section 165 holds the Secretary of a military department responsible for the administration and support of forces assigned by him to a combatant command, the commanders of combatant commands have authority to coordinate and approve those aspects of administration and support (including control of resources and equipment, *internal organization*, and training) and discipline necessary to carry out assigned missions. (Section 164, 10 USC)

Further amplification of these responsibilities and authorities is embedded in several joint publications. For example, Joint Pub 0-2 (Unified Action Armed Forces (UNAAF)) authorizes the combatant commanders to establish both component and functional commands as required. Joint Pub 4.0 (Doctrine for Logistic Support of Joint

Operations) specifies that each Service is responsible for logistic support of its own forces, but gives the combatant commander approval authority over Service logistic programs within the AOR.

Although the Services are normally responsible for funding facility acquisition and support, the geographic combatant commander has responsibility for the theater LOC. He is responsible for establishing and maintaining an effective distribution network, establishing bases, coordinating real estate requirements, and planning and constructing roads, bridges, and facilities in the AOR.

The combatant commander also is authorized to take measures to prevent or eliminate unnecessary duplication of facilities and overlapping of functions among the Service components. To achieve this unity of effort, Joint Pub 4.0 recommends that a single command authority be responsible for logistics. In addition, whenever feasible, the chains of command and staffs should be organized in peacetime to avoid reorganization during a contingency.

In practice, the command's logistic staff (J-4) in peacetime monitors Service capabilities, coordinates logistic support for future operations, advises the commander on the supportability of proposed operations, and acts as the commander's agent and advocate to non-theater logistic organizations. When a contingency occurs, the command usually will form a crisis action team or battle staff. The J-4 staff typically establishes a Logistics Readiness Center (LRC) to distill information and to respond to questions. To coordinate the logistic effort, however, the combatant command or subordinate joint force commander has no single command authority to ensure unity of effort for the various logistic functions. Instead, commands will form a number of boards, centers, or offices with representation from their staffs and component organizations. Examples of these *ad hoc* logistic committees include:

- Joint Transportation Board (JTB) – Establishes priorities and allocates common-user transportation within the theater.
- Joint Movement Center (JMC) – Coordinates all modes of transportation and implements tasking and priorities of the combatant commander.
- Joint Facilities Utilization Board (JFUB) – Evaluates and reconciles component requests for real estate, use of facilities, inter-Service support, and construction,
- Joint Civil-Military Engineering Board (JCMEB) – Establishes policies, procedures, priorities, and overall direction for civil-engineering construction and engineering requirements in the theater.

- Joint Materiel Priorities and Allocation Board (JMPAB) – Modifies and recommends priorities for allocation of materiel assets.
- Joint Petroleum Office (JPO) – Provides wholesale bulk petroleum management support.
- Commander-in-Chief Logistic Procurement Support Board (CLPSB) – Coordinates contracting operations within the command.
- Theater Patient Movement Requirements Center (TPMRC) – Coordinates and controls the movement of patients within and out of the theater.
- Joint Blood Program Office (JBPO) – Plans, coordinates, and directs handling, storage, and distribution of blood and blood products within the theater.
- Joint Mortuary Affairs Office (JMAO) – Plans and operates all mortuary affairs programs.

These temporary boards, centers, and offices are usually established at the outset of a contingency to coordinate component capabilities to support the joint force and to integrate the strategic, operational, and tactical levels of logistic support within the theater. Although the J-4 serves as the commander's principal logistic advisor, he is a staff officer, not the single command authority recommended in doctrine. His role – to coordinate the activities of a large number of logistic committees with a goal of achieving unity of effort within the AOR through the subordinate Service component organizations – is difficult, especially during a rapidly emerging contingency.

B. PROPOSED FUNCTIONAL COMMAND FOR THEATER SUPPORT

The primary objective of a military force deployment is to project power with the most capable forces, at the decisive time and place. This is accomplished by moving the force and its sustainment through a seamless system from “fort-to-foxhole” so it can be employed to accomplish its assigned mission. In practice, several combatant commands, agencies, and Service organizations have important roles to play in these operations, but the interfaces between the supported command and the supporting organizations typically are not clearly defined, even when Command Arrangement Agreements (CAAs) have been prepared.

Within the supported command's AOR, the roles and responsibilities of the component and other Defense organizations employed to establish and operate the theater LOC and to conduct joint RSOI, sustainment, and retrograde operations are even less well established in doctrine, and generally are left for the various committees, described

earlier, to resolve. Although the combatant commander has directive authority over all aspects of military operations, training, and logistics within his AOR, he relies on his component commanders for operational matters. Recently published joint doctrine, however, has established a functional commander to control air and air defense elements of the components – the Joint Force Air Component Commander (JFACC). Joint doctrine also establishes a Joint Rear Area Coordinator (JRAC) to coordinate the protection of forces and resources in the joint rear area, but leaves to the commander's judgment which organization should be assigned this responsibility.

There currently is no joint functional organization capable of exercising command authority for the combatant commander over all operations and logistics conducted in the theater rear area, especially those activities required to plan and operate the theater LOC, and to protect the joint rear area during a contingency. The traditional solution to this problem has been for the commander of the supported combatant command to assign the responsibility for establishing and operating the theater LOC to the component with the largest workload – the dominant user. For most contingencies, this component is the Army, and the mission normally is assigned to the Theater Army Area Command (TAACOM) where forces are forward stationed in peacetime. For other contingencies, the mission usually is assigned to a deploying Corps Support Group (CSG).

Since the CSG deploys early to a theater of operations, using its resources for LOC operations minimizes the amount of combat service support force structure that must be deployed early. However, because this organization is structured to support the elements of a deployed corps, it may not have the proper mix of units and the capabilities needed to operate the joint theater LOC. Its position in the chain of command also makes it difficult to identify and coordinate workloads of other Service components that will use the same LOC facilities and services, supporting capabilities of Army units at echelons above corps or those of other Service components, and host nation support. Furthermore, requiring the organization to use its limited resources for both sustaining its Army customer as the force advances and operating the joint theater LOC may not permit it to perform either job effectively. During multiple corps contingencies where there are no stationed forces, the CSG usually will turn over the mission of operating the theater LOC mission to the deploying TAACOM after sufficient combat and supporting forces have completed RSOI operations, generally between 30 and 60 days after the deployment was initiated.

1. Army Alternatives for Theater Support Structure

The U.S. Army has recognized these problems. One interim solution designates the Deputy Commanding General of U.S. Army Materiel Command as the Deputy Commanding General for Support, Third U.S. Army. In this second role, he is responsible for joint RSOI operations when U.S. Central Command executes contingency deployments to its AOR. This solution establishes an *ad hoc* Army command arrangement effective at the onset of a contingency through which unity of effort is to be achieved within the joint force.

A more permanent solution developed by the U.S. Army Training and Doctrine Command is a concept for a Theater Support Command (TSC). This organization is intended to fix "broken doctrine" without a force structure increase. The TSC would remain a subordinate command of the Army Component Command, but its headquarters would jointly man some staff functions. This organization would add to the TAACOM structure a number of functions currently assigned to echelon above corps Army commands that report separately to the Army Component Commander. The TSC is intended to integrate the strategic and operational echelons of Army combat service support for its evolving "Velocity Management" and "Battlefield Distribution" concepts. It also is focused on the early build-up of combat power in the theater (RSOI operations) and providing operational combat service support to Army forces. The structure of the TSC is shown in Figure III-1 and includes subordinate Engineer, Transportation, Medical, Personnel, and Finance Commands.

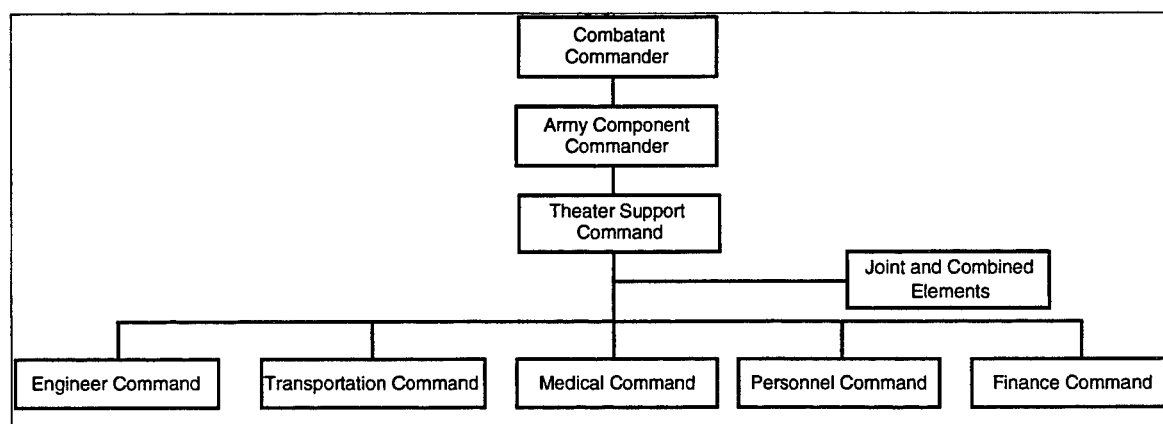


Figure III-1. Proposed U.S. Army Theater Support Command

The TSC concept has been structured so that its subordinate organizations and staff will deploy incrementally to the theater of operations as early entry modules, functional support modules, and command and control modules, to provide essential

support as the build-up for a contingency progresses. The command is designed to have the capability to plan and execute the following functions:

- Army distribution management
- Army contracting
- Army-related Host Nation Support
- Port management
- Army RSOI management
- Army personnel management
- Army finance management
- Army medical service management
- Army engineering management
- Surface transportation management
- Army command and control.

Within the TSC headquarters, joint staffing occurs primarily in the supply and maintenance and the contracting and host nation support directorates. The source of the joint supply and maintenance staffing is provided by the Defense Logistics Agency and its subordinate organizations, while Army strategic logistics expertise is obtained from the Army Materiel Command staff augmentation. For the contracting and host nation support directorate, the joint staffing is provided by the Defense Contract Management Command, and the Army Contracting Support Agency provides the strategic-level Army contracting support. The TSC also provides for combined staffing in the host nation support directorate to ensure close cooperation with national capabilities. The entire TSC staff plans and coordinates the workloads and distributes them to the task units for execution. The actual support for all functional capabilities is provided by Army organizations that are subordinate to the TSC.

While this solution establishes a jointly staffed headquarters to plan and coordinate support of the deployed force, it is still an Army-oriented organization. It does integrate the joint logistics and contracting capabilities into the theater, but within the Army Component Command, not for the joint combatant command. Other Service component personnel performing similar functions within the theater are not included in this organizational arrangement, and the Defense organizations still need to establish similar coordination with the appropriate Service component organizations. Consequently, not all of the joint supporting capabilities and requirements are

incorporated into the theater support planning or operations by the TSC alternative. Parallel but separate Service component stovepipe arrangements do not provide the joint commander with unity of effort or ensure minimum duplication of effort.

2. Proposed Joint Theater Support Command Structure

The supported combatant commander would benefit from a joint functional command, comparable to the JFACC, to exercise control over the theater support resources. This single joint organization would oversee the joint planning and operation of the theater LOC, coordinate U.S. joint support requirements with the host nations, conduct joint RSOI operations, sustain the joint force, protect the joint rear area, manage all retrograde personnel and materiel while in the theater, and manage redeployment of the Joint Force when the mission has been completed. Such an organization can tailor all joint and Service assigned resources, as well as those obtained through host nation or contracted support, to ensure timely and effective support to the force while minimizing the duplication of functions and resources used by the combatant command to accomplish its mission. The organization also could serve as the joint national support element when U.S. forces are conducting combined operations.

The proposed Joint Theater Support Command (JTSC), which is intended to provide such a capability, is shown in Figure III-2. This concept, similar to the TSC, would reorganize assigned resources under a single joint functional commander. The JTSC includes many of the organizations already identified in the Army's TSC, but they would include functional staff elements and task units from all Services, not only those from the Army. The JTSC also would serve as the theater's interface with all Defense agencies (less intelligence), and active or reserve component augmentation for the JTSC staff and task units would be integrated into this joint functional structure.

The JTSC organization shown in the figure represents a fully mature organization deployed to a major regional contingency or war. In practice, the organization would be structured in peacetime to accommodate two situations: (1) a combatant command with forward stationed forces and (2) a combatant command with CONUS-based forces. In the first case, the forward stationed resources of the components would be placed under the OPCON of the commander, JTSC. The exact organizational arrangement would be tailored to the availability of resources. Many of the day-to-day tasks of the JTSC subordinate joint functional commands may be performed by staff sections of the JTSC headquarters. In other cases, some functions of these commands might be accomplished by contracted or host nation support. In the second case, the CONUS-based headquarters

of the JTSC and its subordinate joint functional commands could be manned with an active and reserve mix of staff personnel.

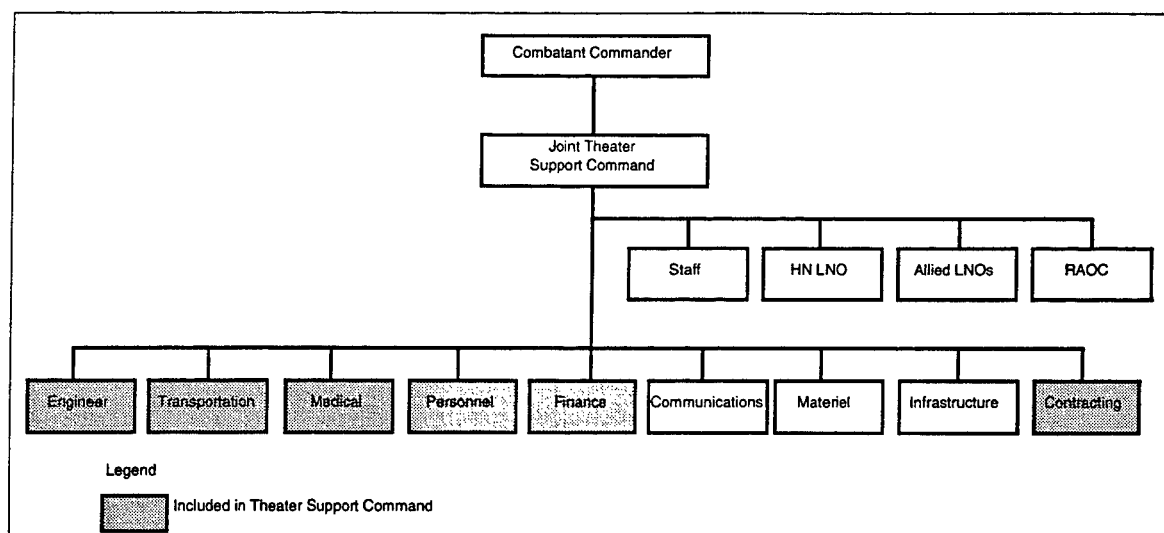


Figure III-2. Proposed Joint Theater Support Command

The JTSC would need to plan how its force will be structured over time. Specific task unit capabilities will need to be identified and scheduled into the TPFDD for contingency deployments. These capabilities are usually considered “below the line” resources and are not typically apportioned to the combatant command by the Joint Strategic Capabilities Plan (JSCP) or contingency directives from the NCA. The JTSC would represent the interests of the supported combatant commander when these requirements are sourced from resources available to USACOM and its components, the Military Departments, and the Defense agencies. These force elements also need to be exercised during peacetime training to ensure they can work together when deployed to support a contingency.

The subordinate joint functional organizations of the JTSC would include all support functions that are performed in the joint rear area. The proposed communications organization would integrate the Service component communications organizations assigned at echelons above corps and above wing, including the Defense Information Systems Agency resources deployed to the theater. This organization would establish both the rear area internal communications support architecture and the interfaces between the theater rear and the component commands and the strategic systems.

The proposed materiel organization would integrate the Service component supply and maintenance organizations at the same echelons. It would manage the prepositioned materiel for the command and ensure that the Army's “Velocity

Management" and "Battlefield Distribution Systems" are integrated with the Air Force's "Air Mobility Express" concept. It also would perform the tasks currently assigned to the JMPAB, JPO, and JMAO.

The proposed infrastructure organization would compile the host nation support requirements for the combatant command and develop, in coordination with the host nation, the implementing agreements for those areas that have been successfully negotiated by the combatant command. The peacetime and contingency stationing and operation of forward stationed military communities are other responsibilities of this organization. This organization also would plan and operate the joint distribution network and theater LOC needed by the command during contingency operations. It would control area support groups, air base groups, and other organizations responsible for facility operation, and would perform the functions of the JFUB.

The proposed contracting organization would expand on the staff-oriented arrangement of the TSC. The command would execute the functions of the CLPSB. The engineering organization would include not only the Army echelon above corps units, but also the Air Force and Navy engineering capabilities (e.g., RED HORSE and SEABEES), and host nation or contracted support (e.g., LOGCAP) employed within the theater. This organization, working with the JTSC staff, would execute the functions of the JCMEB.

The proposed finance, medical, and personnel organizations would integrate the capabilities of all four components into joint functional organizations responsible for ensuring that Service requirements are met while achieving unity of effort, setting common standards within the theater for missions such as life support, and minimizing duplication of resources to accomplish these functions. The transportation organization would serve as the single mode operator for all common-user transportation, including theater airlift, surface transport, and host nation support and contracted transportation. In addition, the commander of the JTSC normally would be designated as the JRAC.

A definition of the proposed JTSC and its assigned responsibilities follows:

Joint Theater Support Command (JTSC) – A jointly staffed theater level organization, under the command of a geographic combatant commander. The commander of the JTSC is responsible for planning and providing all theater support functions during contingency or wartime operations, and in peacetime for forces stationed within the command's area of responsibility outside of the continental United States (OCONUS). These functions include engineering, transportation, medical, personnel, finance, communications, materiel management, mortuary services, infrastructure (facilities), and contracting. The JTSC commander normally will be designated as the JRAC. (Source: Stipulated)

The three organizational concepts described – the Army's Deputy Commanding General for Support, the Army Theater Support Command, and the proposed Joint Theater Support Command – should be evaluated by the combatant commands and their components. Evaluation can be accomplished during command post exercises and field training exercises that involve joint RSOI, sustainment, and retrograde operations. The Unified Endeavor exercise series conducted by USACOM is one example that might be used for the evaluation. Other potentially useful exercises include the annual RSOI exercise conducted by U.S. Forces Korea and the annual Crisis Management Exercise (CMX) conducted by NATO. These exercises directly involve host nations and allied forces and might provide additional useful insights.

USACOM, in coordination with the combatant commands and components, should evaluate the proposed organizational concepts for improving joint RSOI, sustainment, and retrograde operations during Unified Endeavor or other exercises to determine their effectiveness; if warranted, USACOM should propose to the Joint Staff that the most effective option be incorporated into Joint doctrine and geographic combatant command organizations.

C. PROPOSED ORGANIZATIONS FOR NODES OF THE THEATER LINES OF COMMUNICATIONS

The combatant command is responsible for establishing and maintaining the effective distribution network and bases needed to support the force. In the concept proposed above, the JTSC would accomplish these tasks for the supported combatant command. Below the JTSC echelon, however, the elements that operate the nodes of the theater LOC must be organized and deployed to conduct RSOI, sustainment, and retrograde operations. This requirement is especially important because many of the elements that perform these tasks are *ad hoc* task forces created from resources provided from many U.S. organizations that have never worked together, and often include civilian or military resources from host nations, allied organizations, or even contracted support. This section identifies the various elements that will be needed to perform these tasks at the LOC nodes and proposes organizational arrangements to achieve unity of effort to support joint RSOI, sustainment, and retrograde operations.

1. Reception Nodes

The two principal reception nodes are the entry points to the theater LOC. The Joint Water Port Complex and the Joint Aerial Port Complex were described in Chapter

II. This section identifies the organizational elements of the components that are likely to operate these nodes and proposes a joint command and control structure for them.

a. Proposed Joint Water Port Command

As a result of the experience gained through planning the deployment to Haiti in September 1994, USACOM, USTRANSCOM, and their components developed a "Seaport Operating Joint Force Package." This effort established four levels of contingency forces for deployment into an area where infrastructure was available but no host nation support could be provided. The study then identified the type and number of units each component would require to operate the seaport (water terminal as defined in Chapter II), including the mission areas of command and control, communications, port preparation, operation, security, safety, and logistics support. These requirements are summarized in Table III-1 and show that the U.S. forces might require from 1,183 personnel in a small humanitarian operation to more than 5,700 personnel from the Services and the U.S. Coast Guard to operate a water terminal during a major regional contingency.

The number of units and personnel could be reduced substantially if host nation or contracted support were available. However, this list does not identify or provide resources for other activities that will occur in or near the terminals that are part of the Joint Water Port Complex (JWPC) operation. The other resources include those needed to operate the Port Support Activity (PSA) and the Driver Holding Area Support Group (DHASG). In some contingencies, helicopters may be included in the flow of arriving materiel, and special detachments will be needed at the water terminal to reconfigure these aircraft and prepare them for flight. A Sea-to-Air-Interface Organization (SAIO) may be required, especially if the theater LOC is quite long. There also is a requirement for a joint command and control headquarters to plan and oversee all of the task-organized U.S. forces operating within the JWPC.

The PSA is a component task force organized to provide and manage the drivers who assist the terminal operator with unloading vehicles from the arriving ships and moving them to vehicle assembly areas (VAAs). The number and types of drivers needed by the PSA will vary with the planned flow of materiel. The drivers must be capable of operating all of the type vehicles that will be delivered to the terminal. If helicopters are deployed through the complex, the PSA also will require ferry crews.

Table III-1. Joint Force Package for Water Terminal Operations

Unit Title	Unit Type Code UTC	Package A Full MRC		Package B LRC		Package C Major Peace Enforcing		Package D Small Humanitarian	
		No Units	Total Pers	No Units	Total Pers	No Units	Total Pers	No Units	Total Pers
MTMC Element		1	47	1	35	1	16	1	11
MSC Office		1	43	1	32	1	18	1	7
HHC Composite Group	UFACB	1	81	1	81	1	51	1	31
HHC Terminal Battalion	UFACE	3	254	1	84	1	84	1	51
Terminal Service Co	UHBNN	4	1,156	3	864	2	572	1	284
Terminal Svc Co (RC)	UHBNN	3	876						
Trans Contracting Det	URZVV	2	24	2	24	1	12	1	15
Trans Cargo Transfer	UPXXX	2	413	1	204	1	204	1	67
Engr Port Constr	48AAQ	1	167	1	30	1	30	1	30
Log Spt Vessel Det	UAQEE	2	62	2	62	2	62	1	31
Heavy Boat Co	UMBNN	2	184	2	113	1	89	1	42
Medium Boat Co	UKBNN	1	133	1	46	1	46	1	16
Floating Craft Co HQ	UFACJ	3	31	2	20	2	20	2	17
LARC LX	UK477	2	100	1	50	1	50	1	25
Harbor Tug 100	UDPPP	6	92	3	44	3	44	3	44
Deck Liquid Barge	ULPPP	2	8						
QM Wtr Tm BG	J6444	2	28	1	13	1	13	1	13
QM Water Purf Tm	JFKEE	1	15	1	15	1	15	1	15
Petroleum Supply Co	J5TNN	1	197						
Petrl Pl Tml	JWJCM			1	183	1	183	1	183
Heavy Crane Det	UG477	3	106	2	70	1	34	1	34
Floating Crane	UFACJ	2	26	1	11	1	11	1	11
Offload & Prep Pty	U99BB	1	88	1	82	1	82	1	66
RO/RO Discharge	U99BB	3	75	2	50	2	50	1	25
Floating Pier	U99BB	2	50	2	50	2	50	1	25
Pusher Tug 45	U99BB	6	18	4	12	4	12	2	6
Causeway Ferry Sys	U99BB	4	52	4	52	4	52	2	26
Lt Wt Dive Detachment	4DQNN	2	34	1	17	1	17	1	17
C&S Dive Detachment	4BQNN	1	13						
Ft CFT GS/DS MT CO	UTD77	1	172	1	60	1	40	1	26
HHD Motor Trans Bn	U7H33	1	48	1	48	1	48	1	50
Trans Medium Wtr	UKBNN	1	141	1	75	1	75	1	15
MDSU Gas Dive Tm	86DD3	1	24						

Table III-1. Joint Force Package for Water Terminal Operations (Concluded)

Unit Title	Unit Type Code UTC	Package A Full MRC		Package B LRC		Package C Major Peace Enforcing		Package D Small Humanitarian	
		No Units	Total Pers	No Units	Total Pers	No Units	Total Pers	No Units	Total Pers
MDSU ESSM RPL GR	86DD4		0*						
SEAL Plt ARG	826FB	1	18						
SEAL Plt Spec Ops	826FC	1	16						
UCT Sea Det	40603	2	10						
Freight Term Unit	J275U	2	72						
Supply Supt Unit	J285U	2	121						
Refr Stir Fac	J289U	2	22						
Mlt Handl Fac LG	J292U	2	64						
BCHGRU CMP Supt	86FFT	1	56						
IUW Grp C3 Det	87UWB	1	20						
IUW Grp C3 Det	G6GGO	1	20						
ARS Class	MARSA	4	45						
ATS Class	MATSA	1	14						
ATS Salv Tug	MXTSA	1	108						
YTB LG Harb Tug	MYYBA	1	10						
N24A Tent Camp	LA170	1	62						
N24B Camp Unit	LA19U	1	62						
N24B Hut Camp	LA19W	1	62						
Tank Farm Unit	JAO1U	5	14						
25 Bed Clinic	F679U	1	39						
60 Bed Tent Hosp	F691U	1	59						
Power Plant	4535W	1	9						
SALTS Inf Comp	62011	4	12						
HQ Supt Facil	LA01W	3	45						
HQ Supt Unit	LA01U	1	45						
MHE Port Ops	UCHC5		0*						
MHE Gen Purpose	UCHD1		0*						
MHE Cntr Yard	UCHD2		0*						
Total Personnel			5,763		2,427		1,980		1,183

* Equipment Only

For its prepositioned afloat package, the Army has identified the need for a PSA organization of about 200 personnel to provide 24-hour operation. Army FM 100-17-2 provides a guide for building such a task force. Another source to guide planning for a PSA is the standing operating procedure (SOP) developed by the 3rd Infantry Division. This SOP has been field tested during a number of Sealift Emergency Deployment Readiness Exercises (SEDREs). The joint headquarters planning the deployment will need to identify the composition and size of the PSA to handle the projected joint workloads for a particular contingency, and source and schedule its deployment in the TPFDD.

The DHASG is a task force established to manage the unit drivers (and helicopter crews) who arrive by air and will pick up their equipment from the PSA in the vehicle (or helicopter) assembly areas. This organization must be capable of accounting for the drivers by unit so they can be matched to their unit equipment on arrival, providing life support to unit drivers while held in the DHA, and transporting them to the VAAs in the vicinity of the water terminal.

A 1,500-man infantry brigade was assigned the DHASG task during the second phase of Operation Desert Shield/Storm and was responsible for supporting more than 41,000 unit drivers on the day the air campaign began. During that operation, unit drivers spent on average more than 30 days in the DHA awaiting equipment because the personnel and materiel flows were not well coordinated. The size of the DHA workload can be reduced significantly if the joint RSOI process is carefully managed. The joint headquarters planning the deployment will need to size the DHASG to handle the anticipated workloads.

If there is a requirement for an SAI operation, it may be established at a nearby airfield. The elements operating the site would be comparable to a small air terminal operation described under the Joint Aerial Port Complex below.

Current doctrine does not provide for a commander or staff to plan or operate the JWPC during a contingency deployment. Instead, each Service component plans its own operation at the facility and, during execution, coordinates separately with the other components, the host nation, and allies as required to accomplish its mission. The size of these operations, the number of units and *ad hoc* task forces that will need to work together, and the vulnerability of these operations point to an urgent need to establish a single joint commander and a supporting headquarters to achieve unity of effort for the supported commander within the complex and to control the interface between the complex and other theater LOC organizations. One of the missions of the Army's Area

Support Group (ASG) is to assist with RSOI operations. The headquarters of this organization, if jointly staffed, should be able to support its commander if assigned as the JWP Commander.

The commander and staff of such an organization in peacetime would form the nucleus of a Joint Water Port (JWP) Command. It would plan for contingency operations, identify the type of units and task forces that will be needed to operate the complex, and tailor the deployment sequence through the JTSC to ensure that only the elements that are needed will be deployed early. During execution, the command will control (OPCON of elements operating within the complex and TACON of elements transiting the complex) all U.S. operations within the JWPC and coordinate U.S. requirements with the host nation and allied forces using the same facility. A proposed definition of the command and its responsibilities follows.

Joint Water Port (JWP) Command – A subordinate organization of the Joint Theater Support Command that plans and conducts all U.S. operations related to receiving, processing, servicing, supporting, securing, and facilitating deployment or retrograde flows of personnel, materiel, and units into or out of the Joint Water Port Complex. The organization includes military, civilian, and contractor elements that operate the water terminal, holding areas, and transshipment and intermodal sites associated with and included within the complex. The commander of the Joint Water Port Complex coordinates plans and operations with the components, host nation authorities, and U.S. Transportation Command and exercises operational control (OPCON) of all military units performing these functions within the complex, contract supervision over contractor organizations performing these functions, and tactical control (TACON) over the flows of U.S. units, personnel, and materiel passing through the complex. Security forces may be provided from any or all Service components, host nation, or allied support. The commander also serves as the base cluster commander for rear area protection missions. (Source: Stipulated)

This organizational concept should be evaluated by the combatant commands and their components during deployment command post and field training exercises using both forward stationed and CONUS-based situations. If the concept achieves the desired result, it should be proposed to the Joint Staff and be incorporated into joint and Service doctrine and geographic combatant command organizational structures.

USACOM, in coordination with the combatant commands and their components, should evaluate the proposed Joint Water Port Command organizational concepts during Unified Endeavor or other exercises to determine its effectiveness; if warranted, USACOM should propose to the Joint Staff that they be incorporated into joint doctrine and geographic combatant command organizations.

b. Proposed Joint Aerial Port Command

USACOM and USTRANSCOM have not developed a listing for joint elements that will deploy to and operate air terminals comparable to the one developed for the water terminal. The Air Mobility Command (AMC), however, has developed a "Global Reach Laydown Package (GRLP) Concept of Operations" for its units that provides a rapid and flexible response to emerging contingency operations. This concept identifies AMC force modules that will operate air terminals at "hub and spoke" locations within the AOR.

Hubs are air terminals that serve as intermodal transfer sites between the strategic and theater distribution systems, and have a capacity of about 500 short tons (STONs) per day with a deployed AMC population of about 1,000 personnel. It should be noted, however, that some contingency deployments have daily requirements of from 1,000 to 2,000 STONs where facilities permit, and the needs of the supported commander require the greater workloads. Alternative GRLP modules for these situations should be developed by the AMC.

Spoke locations are temporary operating locations designated as endpoints for delivery of cargo and passengers to the supported command. These locations will typically have capacities of less than 100 STONs per day and no more than 200 deployed AMC personnel.

As described in Chapter II, there are a number of other nodes within the Joint Aerial Port Complex (JAPC) operated by other Service component organizations that must interface with the air terminal operations of AMC. In addition to the AMC elements, these organizations typically include the Arrival Airfield Control Group (AACG) and an Air Terminal Movement Control Team (ATMCT) to facilitate the arrival of personnel and materiel and to arrange onward movement to intermediate or final destinations. While the AACG and ATMCT are usually formed by the Army component, other Service components may form similar organizations to support their deploying requirements. The combatant commands and their components should examine the utility of establishing joint AACGs and ATMCTs to process these requirements more efficiently.

If the site is used to process air transportable units, a Marshaling Area is normally established near the air terminal to enable commanders to reassemble their units, reestablish control, and prepare for onward movement. A Helicopter Assembly Area may be established within the complex where these aircraft can be reconfigured and

prepared for flight. Personnel can be delayed while transport is arranged or because separately transported elements of a unit are diverted or experience delays enroute. An Air Terminal Personnel Holding Area may be established to process and provide life support to these individuals during their temporary stay at the JAPC.

Current Multi-Service Doctrine recommends that A/DACG should be organized as a provisional unit with personnel and equipment resources provided from units or activities that are not required to accompany the transported force. The Army recently assigned the responsibility for performing A/DACG functions to its Cargo Transfer Companies. If the Cargo Transfer Company also was responsible for operating jointly the Marshaling Area, the Helicopter Assembly Area, and the Air Terminal Personnel Holding Area, this arrangement would consolidate a number of related activities under a single commander and could reduce the resources each Service component would need to deploy to process its own forces. The Army recognizes that guidance is needed to assist planners in sizing and structuring the joint A/DACG, and establishing training standards for the organization.

The facility is likely to be used for retrograde flows to take advantage of returning strategic aircraft. Medical evacuation will be processed by the Aeromedical Evacuation Liaison Team (AELT) located in the vicinity of the air terminal. If the contingency includes NEO, there will be a NEO Holding Area established in the vicinity of the air terminal. If enemy prisoners are to be evacuated, an EPW Holding Area should be established. Retrograde materiel for all components arriving at the JAPC should be coordinated through the joint ATMCT and loaded by the AMC element operating the air terminal. Guidance for planning these organizations is also required.

In some contingencies, the same airfield may be used as a base by other organizations. For example, the JAPC may be required to share the runway and ramps with host nation, allied, or U.S. combat aircraft or helicopters operating from the same location. The commander of the JAPC will need to coordinate the real estate and operational requirements of his organization with appropriate authorities to minimize the adverse impact on the RSOI, sustainment, and retrograde operations within the complex.

As was the case for the JWPC, current doctrine does not provide for a JAPC commander or staff to plan or operate the complex during a contingency deployment. The lack of a joint U.S. commander to control U.S. operations within these complexes and to coordinate them with other organizations using the same facility does not provide unity of effort. Each Service component plans its own operation at the facility and during execution coordinates separately with the other components, the host nation, and allies as

required to accomplish its mission. Furthermore, there is no single commander to ensure that the supported command's requirements are coordinated effectively with the local commander of the USTRANSCOM elements using the same facility.

The critical nature of these large operations, the number of separate units and *ad hoc* task forces that will need to work together, and the vulnerability of the resources at these locations highlight an urgent need to establish a single joint commander and a supporting headquarters to achieve unity of effort for the supported commander within the complex. The commander and staff also should control the interface and flows of resources between the complex and other theater LOC organizations, as well as the strategic ALOC. A jointly manned ASG headquarters should be capable of supporting the designated commander of the JAPC.

The commander and staff of such an organization in peacetime would form the nucleus of a Joint Aerial Port (JAP) Command. Similar to the JWP Command, it would plan for contingency operations, identify the type of units and task forces that will be needed to operate the complex, and tailor the deployment sequence through the JTSC to ensure that only the elements that are needed will be deployed early. During execution, the command will control (OPCON of elements operating within the complex and TACON of elements transiting the complex) all U.S. operations within the JAPC and coordinate U.S. requirements with the host nation and allied forces using the same facility. A proposed definition of the command and its responsibilities follows.

Joint Aerial Port (JAP) Command – A subordinate organization of the Joint Theater Support Command that plans and conducts all U.S. operations related to receiving, processing, servicing, supporting, securing and facilitating deployment or retrograde flows of personnel, materiel, or units into or out of a Joint Aerial Port Complex. The organization includes military, civilian, and contractor elements that operate the air terminal holding areas, and transshipment and intermodal sites associated with and included within the complex. The commander of the Joint Aerial Port Complex coordinates plans and operations with the components, host nation authorities, and U.S. Transportation Command, and exercises operational control (OPCON) of all U.S. military units performing these functions within the complex, contract supervision over contractor organizations performing these functions, and tactical control (TACON) over the flows of U.S. personnel, units, and materiel passing through the complex. The commander also serves as the base cluster commander for rear area protection missions. (Source: Stipulated)

This organizational concept should be evaluated by the combatant commands and their components during deployment command post and field training exercises. If the concept achieves the desired result, it should be proposed to the Joint Staff and be

incorporated into joint and Service doctrine and geographic combatant command organizational structures.

USACOM, in coordination with the combatant commands and their components, should evaluate the proposed Joint Aerial Port Command organizational concepts during Unified Endeavor or other exercises to determine its effectiveness; if warranted, USACOM should propose to the Joint Staff that they be incorporated into joint doctrine and the geographic combatant command organizations.

2. Other Organizations that Operate Theater LOC Nodes

The other nodes of the theater LOC also will have organizations assigned to perform the functions that are planned to occur at these sites. The proposed JTSC will exercise joint control of the theater LOC on an area basis employing available Service component organizations to achieve unity of effort. This section describes these organizations.

When military forces are forward stationed in peacetime, they occupy bases or installations provided by the host nation. The Service components establish various organizations to operate these facilities and provide support to the forces (and their dependents, in some cases). The Army usually establishes ASGs to provide support on an area basis and subordinate Base Support Battalions (BSBs) to administer local installations and facilities. The other Service components establish Air Base Groups, Naval Facilities, or Marine Bases to perform similar functions in these overseas areas. The infrastructure organization of the proposed JTSC would provide joint oversight for these organizations in peacetime and plan for their joint use during contingency operations.

When a contingency occurs, a theater LOC connecting the reception nodes with the planned final destinations will be required. The same organization of the JTSC would plan this network of nodes and links to ensure the forces can accomplish their assigned mission. A number of organizations will be needed to operate the nodes to support the deployment. Many of the organizations are *ad hoc* task forces established to perform a temporary mission during a phase of the deployment, or an organization may be assigned a continuing task for the duration of the deployment. The ASG should be considered as an intermediate command to exercise joint command and control on an area-wide basis. Within its assigned area, the ASG would plan and control the operations of the various nodes of the theater LOC and coordinate protection of U.S. resources operating or transiting the nodes.

The Marshaling Areas and Staging Areas are key nodes in which military force capabilities will be reassembled. Task forces will be needed to operate these facilities until all forces have completed the deployment and have been integrated into the theater force. Currently, there are no guidance documents that describe the duties and responsibilities of these task forces, the size and timing of the workloads they must process, or the personnel and equipment requirements that will enable them to accomplish the tasks. Where possible, these nodes should be operated on a joint basis to minimize duplication of limited resources. USACOM, the geographic combatant commands, and their components should develop guidance for Marshaling Area Support Groups (MASGs) – including Helicopter Marshaling Area Support Groups (HMASGs) – and Staging Area Support Groups (SASGs).

Task forces will usually be assigned responsibilities for establishing and operating Convoy Support Centers (CSCs) and Aircraft Enroute Support Sites (AESSs) within the theater. They are operated to support all forces deploying through the theater LOC and need to plan for joint (and in some contingencies combined) workloads. In some cases, only U.S. command and control elements will be required to coordinate host nation resources or to supervise contracted support performing the operations at the nodes. The irreducible minimum U.S. military presence within the node organizations also should be identified by the combatant commands.

Tactical Assembly Areas (TAAs) are final destinations for Army and Marine Corps major commands. Guidance for planning the organizations to operate these nodes also needs to be developed by the combatant commands.

Other nodes such as the various types of intermodal transfer points defined in Chapter II, the supply support activities, and the non-unit related personnel activities are usually planned and operated by a Service component organization. The combatant commands and their components should specify these organizations and their capabilities and identify under which circumstances they must be operated on a joint basis.

3. Recommendations for Node Organizations

The discussion throughout this section has identified a need to provide planners with guidance to enable them to plan the organizations that will operate the theater LOC nodes. There currently are no guides to assist planners with structuring such task forces. USACOM, as the joint force provider, should develop such a guide, in coordination with the other combatant commands and their components, so that planners and providing

organizations have a common understanding of the requirement and units can be equipped and trained to perform the mission when required.

This guidance could be published in a Joint Theater LOC Planning Handbook and distributed to combatant command and component planners to standardize their planning. The necessary guidance for organizing these resources will need to take into account theater and contingency variations that may be encountered, and ensure that an irreducible minimum U.S. command and control element is identified to oversee U.S. interests and operations at the theater LOC nodes when host nation, allied, or contractor support is employed.

USACOM, in coordination with the other combatant commands and components, should develop a Joint Theater LOC Planning Handbook containing guidance for establishing, sizing, and structuring task forces required to operate nodes that support joint RSOI operations. As the joint force provider, USACOM should ensure these task forces are equipped and trained to perform these missions.

Once standard organizational guidance has been developed, USACOM, the other combatant commands, and their components will need to ensure that elements identified to perform node operation tasks during a contingency are equipped and trained to perform them. Once these organizations have been identified, they should have the essential tasks to be performed at the theater LOC nodes placed on the units' mission essential task lists (METLs). Joint and Service deployment command post and field training exercises then will need to focus on training these tailored task forces to process the joint workloads, and to work closely with allied civilian and military organizations and contractor resources in various theaters. The Army's efforts to bring the RSOI operation into the routine deployments of heavy forces to the National Training Center, the SEDREs mentioned earlier, and the annual RSOI exercise sponsored by U.S. Forces Korea are examples of where joint node operating organizations may be exercised.

USACOM, the other combatant commands, and their components should identify the units that will be tasked to perform node operations during deployment, and should add the standard node operation task to the mission essential task lists of these units, and integrate the standard tasks and node operating organizations into deployment command post and field training exercises.

D. MODE ORGANIZATIONS

The mode resources are already organized by the Service components into task units and command and control headquarters. The transportation organization of the proposed JTSC would exercise joint command and control over these organizations

assigned to the combatant command, and respond to tasking from the movement control organization described in the next section. This organization also would coordinate mode support with host nations and identify mode requirements that can be met through contract support.

The command and control and task unit capabilities of the components that will be employed for common-user transportation should be identified and published in the proposed Joint Theater LOC Planning Handbook to assist staffs with joint mode planning. In some cases, the definition of common-user transportation and which elements of transportation (or mobility force) organizations provide node, mode, and movement control functions are not clearly specified. The combatant commands and their components should identify these Service organizational elements and their capabilities, and assign them to the appropriate functional organizations. This will provide planners with a common joint understanding and consistent approach to planning and organizing the resources assigned to their command.

USACOM, in coordination with the other combatant commands and their components, should identify the component command and control and task unit organizations and capabilities to perform common-user mode operations and include them in the proposed Joint Theater LOC Planning Handbook.

E. PROPOSED MOVEMENT CONTROL ORGANIZATION

The control of movements within the combatant commands is the responsibility of the combatant commander. He usually delegates OPCON of movements in accordance with the "most-capable Service" concept discussed in Joint Pub 4-01.3. As a result, the Army Component Command's Theater Army Movement Control Agency (TAMCA) typically exercises movement control over all surface movements for the joint force within the joint rear area, and coordinates movements into the combat zone. Traffic management will be exercised by the TAMCA or when forces are stationed forward, through Installation Transportation Offices (ITOs) or Traffic Management Offices (TMOs) located within the theater. Marine component movements are handled through the Force Movement Control Center (FMCC) when they deploy ashore, usually in the combat zone. Movements by common-user sealift are coordinated through the Military Sealift Command Offices (MSCOs), if established, and the MSC Area Command supporting the combatant command. The Navy's ALSS will coordinate strategic movements into and out of the theater with the JMC, when activated. It also will control movements of its organic support to the fleet.

Theater air movements are planned, coordinated, and tasked by the Airlift Control Center (ALCC) operated by the Air Force Component Command. These movements are managed through an Airlift Coordination Cell within the Air Operations Center (AOC). An Air Mobility Element (AME) also may be established in the theater, if requested. This organization is a forward deployed element of the Air Mobility Command's Tanker Airlift Control Center (TACC) and is established to coordinate strategic airlift operations into and out of the theater. The Director of Mobility Forces (DIRMOBFOR) is an *ad hoc* position established during a contingency to exercise coordinating authority for airlift among the ALCC, AME, TACC, JMC, and the AOC.

Retrograde movements usually are processed through Service component channels. When there is a large requirement for evacuation of patients, an Aeromedical Evacuation Control Center (AECC) will be established to exercise control over these movement requirements.

Current joint doctrine provides for the establishment of a JMC and recommends its organizational structure. The purpose of the temporary JMC, as it is defined, is one of coordination accomplished through establishment of policies.

Joint Movement Center (JMC) – The center established to coordinate the employment of all means of transportation (including that provided by allies or host nations) to support the concept of operations. This coordination is accomplished through establishment of transportation policies within the assigned area of responsibility, consistent with relative urgency of need, port and terminal capabilities, transportation asset availability, and priorities set by a joint force commander. (Source: Joint Pub 4-0)

Doctrine also calls for the creation of a Joint Transportation Board (JTB) to set priorities and allocate common-user transportation during a contingency. The commander, however, is not provided with a single organization to control movements of forces, sustainment, and retrogrades based on his established priorities. Movement control within the theater needs to be managed centrally, but execution should be accomplished on a decentralized basis. The JMC can serve a useful role as an information gathering and reporting organization that serves as an extension of the combatant command staff, both its operational staff when moving forces and its logistical staff when moving sustainment or retrograde requirements. The JMC should establish transportation policy for peacetime and contingency operations, coordinate joint strategic transportation requirements and movements with USTRANSCOM's Joint Mobility Center, coordinate U.S. movement requirements and reporting with host nation authorities and combined movement organizations, and exercise technical oversight over

a joint agency that actually controls movements – the proposed theater Joint Movement Control Agency (JMCA).

The JMCA would be a jointly manned organization bringing together all of the agencies, centers, cells, and offices that have a movement control role in the joint rear area under a single commander. The organization of this agency also should provide adequate resources to exchange liaison elements with host nation and allied headquarters when operating in combined contingencies. Movement control of U.S. requirements then can be exercised from the combatant commander through the JMC to the JMCA, and coordinated with appropriate host nation and allied authorities.

The JMCA would plan and establish the movement control architecture (a geographically dispersed, but integrated, network of movement control units with reporting capabilities) needed to control all movements (including contracted transportation) during contingency execution, to track the flows of forces, and to maintain intransit visibility over movements into or out of the theater. The JMCA would collect real-time movement data through its architecture, process it into information, and provide it to the JMC where the information would be used by decision makers. As changes in movements are required, the JMC would direct the JMCA to execute them, which would be accomplished through the movement control architecture. The JMC also would coordinate the flows into the theater with USTRANSCOM's Joint Mobility Center to adjust them to changes in the command's requirements, and to ensure they are balanced with the capabilities of the theater LOC to process them. A proposed definition of the JMCA follows.

Joint Movement Control Agency (JMCA) – A jointly staffed theater-level organization, under the command of a geographic combatant commander, responsible for planning and controlling theater movement of deploying U.S. forces, non-unit personnel and materiel, and retrograde flows. The JMCA is responsible for tasking all modes, validating requirements (based on the combatant commander's priorities), handling traffic management and movement control, and collecting and reporting force tracking and intransit visibility during peacetime, contingency, or wartime operations. (Source: Stipulated)

The proposed JMCA would have assigned to it all component movement control organizations stationed in the joint rear area or those that would operate there during a contingency. These elements include ITOs, TMOs, Movement Control Teams (MCTs), and Tanker Airlift Control Elements (TALCEs). These movement control elements will be employed by the JMCA to form the joint movement control architecture during contingency operations. The architecture should encompass all nodes of the planned

theater LOC, especially nodes where elements of forces are reassembled and undergo RSOI operations, intermodal transfers occur, movement requirements cross international borders, and resources arrive at final destinations.

These movement control organizational and architecture concepts should be evaluated by the combatant commands and their components during deployment command post and field training exercises. If they achieve the desired capabilities, the concepts should be incorporated into joint doctrine and organizations employed by the supported commands.

USACOM, in coordination with the combatant commands and their components, should evaluate the proposed JMCA organizational and movement control architecture concepts during Unified Endeavor or other exercises to determine their effectiveness; if warranted, USACOM should propose to the Joint Staff that they be incorporated into joint doctrine and geographic combatant command organizations.

CHAPTER IV

AUTOMATED RSOI PLANNING AND EXECUTION SUPPORT SYSTEMS AND SUPPORTING DATA

IV. AUTOMATED RSOI PLANNING AND EXECUTION SUPPORT SYSTEMS AND SUPPORTING DATA

This chapter discusses the various automated planning and support tools that currently are available to assist commanders and staffs with deployment operations. It identifies areas where improvements to existing tools or additional tools are needed so that joint RSOI operations can be planned rapidly and thoroughly, and executed effectively and efficiently during future contingencies. The chapter also addresses the data needed to support these tools.

A. BACKGROUND

Military planning is done either in a deliberate manner in anticipation of future hypothetical contingencies, or in a time-sensitive environment in direct response to an emerging crisis where use of military capabilities is being considered. The automated tools available to commanders and staffs must be capable of supporting either planning situation.

In an ideal situation, when a mission is assigned to a combatant command, the tasking directive will apportion major combat forces to the supported commander and identify the key assumptions to use for planning. The supported combatant commander develops the concept for employing the forces to accomplish the assigned mission.

Based on the employment concept, the staffs of the supporting and supported combatant commands must determine *who* and *what* needs to be moved (units and their personnel, equipment, and accompanying supplies, and sustaining materiel), and *where* and *when* it needs to be delivered. These requirements are developed using available automated tools, and coordinated within the Joint Planning and Execution Community (JPEC) through a data base – the time-phased force and deployment data (TPFDD) – supporting the plan for the contingency. The TPFDD records *how* the movement requirements – passengers and cargo – are to be transported to the theater, and when they are to be delivered. It provides the basis for determining whether the deployment can be accomplished in the time specified by the commander's concept.

The JPEC staffs must identify the LOC that will connect the base of support for the deploying force with its base of operations for the contingency. This work – identifying the nodes and links and their capacities – currently is done manually. Automated tools assist with assessments of the flows through the LOC. These tools currently provide the capability to analyze strategic flows into the reception complexes within the theater, but not the RSOI operations that occur as the elements of the force flow through the theater LOC to final destinations. The assessment of the theater portion of the deployment – whether the deployment can be accomplished in the time required – is usually done subjectively by the supported combatant command.

As a result of the strategic assessment, refinements to the TPFDD are usually required during planning to ensure the supported command's requirements are met. These changes are coordinated within the JPEC, and the plan (and its TPFDD) is approved by the Chairman, Joint Chiefs of Staff. When deployment execution is ordered by the NCA, adjustments are likely to be required to accommodate disruptions caused by weather, mechanical breakdowns, enemy actions, or other unforeseen events. The same automated tools used for initial planning can be used to replan the flows during execution, but currently they do not receive real-time input of flow information that could be used to anticipate bottlenecks or to make necessary adjustment during an operation.

B. DESCRIPTION OF AVAILABLE PLANNING TOOLS THAT SUPPORT JOINT RSOI

Several types of automated support tools are needed to assist the commanders and staff with planning and controlling portions of the deployment operations. These tools provide the following capabilities:

- Enable the JPEC to plan, assess, and coordinate the strategic deployment.
- Assist with planning, assessing, and controlling the theater portion of the TPFDD.
- Assist with planning and operating the theater LOC.
- Assist with planning the capabilities of specific nodes in the theater LOC.
- Assist with planning and conducting joint and combined operations with allied forces.

1. Strategic-Level Planning Tools

The NCA, the Joint Staff, combatant commands, defense agencies, and the Services must have the ability to plan and execute mobilization, deployment,

redeployment, and demobilization of U.S. military forces. These organizations accomplish these tasks using the Joint Operation Planning and Execution System (JOPES) and other applications resident on the Global Command and Control System (GCCS). These tools are the keystone systems through which the NCA exercises control over U.S. military operations.

a. Joint Operation Planning and Execution System (JOPES)

JOPES is the primary U.S. system for deployment planning and execution. It is a comprehensive, integrated system of people, policies, procedures, and reporting systems supported by automated systems and applications. JOPES, summarized in Table IV-1, currently operates on the Global Command and Control System (GCCS).¹ JOPES provides the capability both to develop a TPFDD (once the LOC is defined) and to monitor its execution. JOPES was specifically designed to provide strategic deployment information useful to the NCA, the Joint Staff, combatant commands, defense agencies, and the Services.

Table IV-1. Current Automated Information System and Software Applications Supporting High Level Planning

Acronym	Name	Proponent	Users	Use	Remarks
JOPES	Joint Operation Planning and Execution System	Joint Staff	Service HQs, CINCs, CINC Components and Sub-Components	Provides guidance for planning, monitoring, and executing mobilization, deployment, employment, and sustainment activities in peacetime, crisis, and war. Permits scheduling of transportation and monitoring of strategic deployments. Data base contains reference files and TPFDDs of approved plans.	The primary application is on GCCS ADP equipment. Combines former JOPS and JDS.

b. Global Command and Control System (GCCS)

GCCS is an integrated architecture of telecommunications and computer equipment designed to support information sharing among various echelons of command, including the NCA, Joint Staff, combatant commands and their components, defense agencies, Services, and combined and/or joint task forces (C/JTFs).² GCCS provides

¹ JOPES formerly operated on the Worldwide Military Command and Control System (WWMCCS); however WWMCCS was shut down on 30 August 1996.

² Defense Information Systems Agency, Joint Interoperability Test Command, "Operational Evaluation Plan for Global Command and Control System (GCCS), Revision 4," October 1995.

worldwide user-to-user information exchange for command and control, communications, intelligence, functional, and administrative management, including logistics, transportation, personnel, and medical support. GCCS has operated as the sole system of record at nearly 40 sites worldwide since August 1996 when the transition from WWMCCS was completed.

GCCS initially will integrate, and eventually replace, several joint and Service planning and execution systems that formerly operated on WWMCCS. GCCS developers selected from current command and control systems those best suited to integrate as the initial prototype – legacy systems – and then incrementally modified the system configuration to evolve into a long-term solution. This process is referred to as “migration.” The goal is to provide users with an integrated, real-time, true picture of the battle space, and the ability to order, respond, and coordinate vertically and horizontally among commands to perform the mission.

The core of GCCS is a Common Operating Environment (COE) that allows several different software suites to interface with each other and exchange data. Running within this COE infrastructure are five different software mission area applications. These are:

- JOPES Core Mission Applications. These are the applications unique to JOPES.
- GCCS Support Applications. These are software applications that can be used by all software suites running on GCCS.
- Common Tactical Picture Application. This application allows the integration of data from several software suites to be merged onto one screen that allows the user to view selected portions of the entire tactical picture.
- Other Mission Applications. These applications provide other GCCS applications with the capability to obtain and act on information stored in several non-GCCS data bases.
- Site Unique Applications. These applications are only accessible to certain GCCS users.

Table IV-2 lists the software tools that are fielded as part of GCCS version 2.1, as well as the applications on which they are resident. For the most part, they are the same applications already used on WWMCCS, or follow-on improvements to these applications.

2. Strategic TPFDD Development

Once the major forces to participate in contingency operations have been specified, several other tools are used both to help plan which specific units will deploy and to help schedule how these forces will be moved to the theater of operations. These tools are part of the Analysis of Mobility Platform (AMP), an umbrella "fort-to-foxhole" planning system being developed by USTRANSCOM for the JPEC.

a. Analysis of Mobility Platform (AMP)

The AMP effort focuses on the cooperative development and integration of automated tools to facilitate end-to-end mobility planning and execution of contingency deployments. It integrates the capabilities of available systems such as the Dynamic Analysis and Replanning Tool (DART), the Joint Flow Analysis System for Transportation (JFAST), the Model for Intertheater Deployment by Air and Sea (MIDAS), the Mobility Analysis Support System II (MASS II), the Marine Air-Ground Task Force (MAGTF) Deployment Support System (MDSS), and the Transportation Coordinator's Automated Information Management System II (TC-AIMS II) when it becomes operational.

AMP will extend the existing capabilities by adding tools where they are lacking. For example, ongoing developments such as FORSCOM's Mobilization and Deployment Capabilities Assurance Project (MADCAP), Force Generation (FORCEGEN), and Force Flow (FORCEFLO); MTMC's developments of the Port Operational Performance Simulator (POPS), the Enhanced Logistics Intratheater Support Tool (ELIST), and Strategic Transportation Analysis and Decision Support System (STRADS); and the Army's Knowledge Based Logistics Planning Shell (KBLPS) eventually will be integrated into the AMP set of tools. These systems will enable planners to develop, analyze, and provide the results of crisis deployment options to decision makers within hours, and allow them to monitor and adjust the deployment during execution.

AMP has been developed so that all of its component tools can operate independently or interactively. When they are run interactively under the AMP suite, their data bases can be shared and integrated easily.

Table IV-2. GCCS Applications and Functions

Application	Function	Application Suite
Operation Plans (OPLANs) and Operation Orders (OPORDs)	The JOPES automated data processing (ADP) applications facilitate rapid building and updating of OPLANs and concept summaries in deliberate planning, and rapid development of effective options and OPORDs in crisis action planning. In GCCS Version 2.1 the JOPES requirements are developed using the Requirements Development and Analysis (RDA), Ad-Hoc Query (AHQ), and Scheduling and Movement (S&M) applications.	JOPES Core
Requirements Development and Analysis	Allows planners and operators to develop, edit, and manipulate Time-Phased Force and Deployment Data (TPFDD). Until RDA achieves full functionality, the Dynamic Analysis and Reporting Tool (DART) will also be included in GCCS.	JOPES Core
Ad Hoc Query	Allows planners and operators to define, design, and print reports for information and analysis.	JOPES Core
Scheduling & Movement	Application interfaces with USTRANSCOM's Global Transportation Network (GTN), and provides in-transit movement information through planning allocations, manifested passenger and cargo information, and carrier schedules.	JOPES Core
Transportation Planning	The Joint Flow and Analysis System for Transportation (JFAST) application provides quick response capability to determine the transportation feasibility of an operation plan or course of action.	JOPES Core
Logistics Planning	The Logistics Sustainment Analysis and Feasibility Estimator (LOGSAFE) application provides the capability to both estimate logistics sustainment requirements and evaluate material supportability.	JOPES Core
Mobilization Planning	The Force Augmentation Planning and Execution System (FAPES) application assists planners with mobilization planning, analysis, and execution by forecasting mobilization requirements, identifying manpower resources for each course of action (COA), and monitoring the status and progress of mobilization.	JOPES
Medical Planning	The Medical Planning and Execution System (MEPES) application provides combatant command medical planners with the capability to perform gross medical feasibility and supportability assessments of operation plans.	JOPES Core
Civil Engineer Planning	The Joint Engineering Planning and Execution System (JEPES) application supports combat command engineers in developing civil engineering support plans.	JOPES Core
Unit Status	The Global Status of Resources and Training Systems (GSORTS) application provides both map-based query and display of joint information on the status of units with respect to personnel, equipment, and training.	Other

Application	Function	Application Suite
National Reconnaissance	The Global Reconnaissance Information System (GRIS) application provides automated support for the Joint Staff, unified and functional commands, National Security Agency, and Defense Intelligence Agency. The GRIS provides near real-time mission status to the JCS; generates worldwide airborne Sensitive Reconnaissance Operations (SRO) schedule requests; maintains the historical library of all SRO tracks and operations conducted; and provides daily schedules of all intended airborne SRO.	Site Unique
Non-Combatant Evacuation	The Evacuation File Maintenance and Retrieval System (EVAC) application supports non-combatant evacuation planning and operations. It responds to queries concerning the number of non-combatant personnel to be evacuated in a country or area.	Site Unique
Fuel Planning	The Fuel Resources Analysis System (FRAS) application provides an automated capability for determining the fuel supportability of an OPLAN or COA.	Site Unique
Utility Software	Utility services are provided as part of GCCS through integration of existing government-off-the-shelf (GOTS) or commercial-off-the-shelf (COTS) applications, including message handling software, E-mail, office automation, teleconferencing, Telnex, and file transfer.	GCCS Support
Common Operating Picture	The Joint Maritime Command Information System (JMCIS) application is the foundation for the GCCS fused operational battlespace picture. Incorporated as part of the Common Operating Environment (COE), it provides near real time sea and air tracks, geographic display, contact correlation, and track database management.	Common Tactical Picture
Intelligence	The JMCIS, Navy Tactical Command System-Afloat (NTCS-A), Joint Deployable Intelligence Support System (JDISS), and INTELINK-S applications within GCCS provide intelligence capabilities that include an authoritative and fused common tactical picture with integrated intelligence services and databases; access to theater, service, and national intelligence databases; transmittal and receipt of specific intelligence requests; and the inputting of intelligence data into a variety of operations and intelligence systems.	Other
Collaborative Planning	Theater Analysis and Replanning Graphical Execution Toolkit (TARGET) is a suite of distributed collaborative planning tools.	GCCS Support
Transportation Tracking	The Global Transportation Network (GTN) provides the capability to plan, provide, and control common-user airlift, surface lift, and terminal services that deploy and sustain U.S. Forces	

The tools in the AMP suite of primary interest to theater TPFDD planning are DART and JFAST. These tools allow the theater transportation planner to create a TPFDD rapidly, and to determine when the strategic transportation system can deliver the deploying units, equipment, and sustainment to the theater reception complexes. This information is an important input to the theater LOC planning process. Summaries of these tools are provided in Table IV-3.

Table IV-3. Current Automated Systems and Software Applications Supporting Theater TPFDD Development

Acronym	Name	Proponent	Users	Use	Remarks
AMP	Analysis of Mobility Platform	USTRANSCOM	USTRANSCOM HQ, USTRANSCOM Transportation Component Command HQs, CINCs, CINC Components and Sub-Components	Set of transportation analysis tools aimed at improving joint transportation planning and execution. Provides planners with a rapid analysis of the transportation feasibility of a specific deployment plan, against a planner defined transportation environment. AMP enables USTRANSCOM to determine, within hours, whether a deliberate or crisis deployment plan is supportable by the DTS.	AMP currently includes the MASS, MIDAS, ELIST, FORCEFLO, and JFAST transportation models, as well as the DART TPFDD editing and LOGGEN sustainment estimating tools. Other transportation and scheduling tools will be added to the AMP suite as they are developed. Top Secret level.
DART	Dynamic Analysis and Replanning Tool	USTRANSCOM	USTRANSCOM HQ, USTRANSCOM Transportation Component Command HQs, CINCs, CINC Components and Sub-Components	Provides planner with the capability to rapidly enter, manipulate, and analyze TPFDD force and movement requirements. Includes a distributive collaborative planning capability for the PODs.	Part of the AMP suite of transportation models. Very quick and useful TPFDD editor that has gained wide usage since its development during Desert Storm. Top Secret level.
JFAST	Joint Flow and Analysis System for Transportation	USTRANSCOM	CINCs and Subordinate commands, JCS, USTRANSCOM, Services, Analytical Agencies, and Service schools	High-speed analytical tool used for making detailed estimates of the resources required to transport military forces (including cargo, personnel, and their sustainment) during various scenarios. Estimates when forces will arrive in theater.	Part of the AMP suite of transportation models. Top Secret level.

b. Dynamic Analysis and Replanning Tool (DART)

DART provides the user with the capability to enter, manipulate, and analyze force and movement requirements rapidly, and with the capability to determine quickly

the strategic transportation feasibility of a TPFDD. Based on the concept of distributed collaborative planning, DART allows users at remote sites to collaborate interactively while developing deployment and sustainment plans, and to share and transfer TPFDD records between remote DART systems.

Using DART, planners can:

- Build and edit new TPFDD records
- Graphically represent and modify existing TPFDD records
- Graphically display strategic transportation routes and destinations to help analyze the TPFDD's transportation feasibility
- Create and manipulate force modules
- Automatically check the quality of TPFDD records
- Obtain quick access to the Type Unit Characteristics (TUCHA) file
- Rapidly look-up Geographic Location (GEOLOC) codes.

c. Joint Flow and Analysis System for Transportation (JFAST)

JFAST is a high-speed analytical tool used for making detailed estimates of the resources required to transport military forces, including unit personnel, materiel, and sustainment, to a theater during various scenarios. JFAST input primarily comes from JOPES in the form of the contingency plan's TPFDD and reference files. JFAST also can import plan TPFDDs from DART, as well as export plans to other transportation models such as the ELIST. The primary output of JFAST is an estimate of when forces will arrive at the theater port complexes. This information is important to theater LOC planners because it indicates *when* and *where* the supported command must be ready to receive the strategic flows of personnel, equipment, and sustaining cargo. In addition to estimating theater closure dates (at the reception complexes) for the deploying force modules, JFAST presents a wealth of graphic and tabular output showing the impact of a force deployment option upon strategic transportation resources and the reception terminals used during the simulation.

A potentially very useful feature of JFAST is its capability for creating notional movement requirements for situations in which no plan currently exists. In this situation, an operation plan (OPLAN) or exercise TPFDD may identify where and when the military forces are to be deployed. The JFAST Notional Requirements Generator (NRG) takes division- or brigade-echelon ground units and squadron-echelon air units, as well as expected levels of activity, climate, and desired days of supply, and generates detailed

company- and detachment-level TPFDD deployments. This information can then be used either by the JFAST model to estimate when the notional force closes at the theater reception complexes, or by the planner for further analysis.

3. Theater TPFDD Development

While the strategic-level TPFDD provides information on the arriving workloads, few tools are available to assist combatant command and component planners with planning or assessing *how* these flows will move through the theater LOC or *whether* they can be delivered within the time specified by the commander's employment concept. The strategic TPFDD used in JOPES only contains the arrival location and final destination within the theater for movement requirements. Although JOPES provides for a single intermediate destination, it cannot represent all of the multiple intermediate destinations (nodes of the theater LOC) through which many of the deploying elements must pass, and where they are likely to experience RSOI processing delays before integration into the force is completed.

The theater-level TPFDD should contain two essential elements to enable the staffs to determine *how* the theater flows will be handled and *whether* the theater portion of the deployment is feasible. These elements are: (1) sufficiently detailed data to represent the separate movement increments and their planned flows through the nodes of the theater LOC, and (2) the task-organized node, mode, and movement control organizations (U.S. military, host nation, contractors, or allies) that will deploy to and operate the U.S. portion of the theater LOC. Before such detailed force deployment data can be developed, however, the staffs must identify the following contingency-specific information about the underlying theater LOC:

- The theater LOC nodes needed to support the deployment and employment concepts.
- The facilities and capacities provided for U.S. use by the host nation.
- The amount and timing of host nation or other labor, services, and supplies provided to support U.S. RSOI, sustainment, and retrograde operations.
- The capacity of the routes and capabilities of the modes supporting the U.S. LOC operations.

a. Theater LOC Planning Support

There currently are no tools – manual or automated – to guide staff planners as they develop a theater LOC to support U.S. forces. Service component staffs generally

determine how their units will deploy into and through the theater based on the Service doctrine and component commander's guidance. In theaters with assigned Major Regional Contingencies (MRCs), these concepts may be developed and coordinated among the Service components and with combatant command staff, the host nations, or other allies, for deliberately planned contingency deployments. For most contingencies, however, planning is likely to occur in a time-sensitive environment in response to a crisis with little time available to effect coordination.

(1) Joint Theater LOC Planning Guide

There are no tools currently available to guide staffs with planning the theater LOC. In addition, there are considerable variations in terminology, operational concepts, organizational arrangements, and data requirements. A Joint Theater LOC Planning Handbook could be a useful document to standardize terminology, to establish a comprehensive planning process, and to identify the desired physical characteristics of theater LOC nodes and the types of data that are required to support these planning efforts. The Joint Staff should initiate development of such a handbook to assist combatant command and component staffs with planning the theater LOC. The terminology and procedures contained in the handbook also should be incorporated into joint doctrine where appropriate.

USACOM, in coordination with the other combatant commands and components, should develop a Joint Theater LOC Planning Handbook containing guidance and procedures for planning the nodes and links of a theater LOC to accommodate contingency deployment and sustainment operations, and coordinating these requirements with host nations and other allies.

The handbook also could be used to educate future staff officers at selected Service and joint schools such as the Armed Forces Staff College, and to train staffs during command post exercises such as the Unified Endeavor series sponsored by USACOM.

USACOM should incorporate the proposed Joint Theater LOC Planning Handbook into the Unified Endeavor exercise series to train staffs and propose that it be incorporated into the curricula of the Armed Forces Staff College and appropriate Service schools to educate future staff officers on the importance of and methods to be used for planning theater LOCs during contingencies.

Such a handbook also could be used as the basis for developing automated support tools to facilitate rapid development of alternative theater LOCs when these staffs plan future contingencies.

(2) Automated LOC Planning Tool

The U.S. Army's KBLPS is an automated support tool that is able to develop in detail a logistical support plan for a course of action. Although currently focused on Army problems at the corps-level, the tool may be adapted to provide planners with an automated capability to develop rapidly the network of nodes and links that form the theater LOC, and to match the operating organizations with the workloads they will be expected to process.

The KBLPS is part of the Logistics Anchor Desk (LAD). The LAD is a two-computer system that allows logistics planners to determine the location and status of selected Army materiel inside and outside the theater of operations and, based on that information, plan the logistical force required to support a proposed corps-level operation. One of the LAD computers runs a situational awareness model that consolidates data from numerous existing Army data bases. This model allows the planner to determine what resources are or could be made available for his operation.

Once the resource data are available, the other LAD computer runs a planning and analysis module that uses the data to develop a logistical plan that supports the course of action. The planning and analysis module of the LAD is the Knowledge Based Logistics Planning Shell.

KBLPS is an interactive decision support system that assists logisticians in planning the allocation and transportation of support at the corps level, which are issues also of concern to theater LOC planners. Sponsored by the Army's Logistics Integration Agency (LIA), KBLPS is used for instructional purposes at the Army's Command and General Staff College. In addition, the XVIII Airborne Corps used KBLPS successfully during Operation Desert Shield/Desert Storm to help develop the logistics plan.

The first thing the planner does when using KBLPS is to move icons representing the corps units onto a map background to show where the units are or will be during the proposed operation. For most common corps-level and lower units, KBLPS has a built-in data base that includes default information about corps-subordinate combat units, as well as the support slice usually allocated to those units. The user can change these default values as desired. Similar data bases could be developed for both LOC operating organizations and the infrastructure available in various contingency areas.

Based on a series of default or user-defined constraints and priorities, KBLPS generates a basic logistics plan that maximizes the efficient use of available combat support/combat service support (CS/CSS) resources. KBLPS color-codes the unit icons

to show if they can be adequately supported by the plan. Embedded spreadsheets and graphics allow the planner to view various aspects of the plan, including such factors as logistics flow through certain nodes or links, and the consumption of logistics by node.

KBLPS usually is used to plan for a 120-hour planning horizon, although there is no fundamental reason that it cannot be used for other time intervals. If the planner decides that modifications are needed to the plan, he can change constraints, priorities, or resources, and have KBLPS reevaluate the situation. Once he is satisfied with the plan, the graphics generated by KBLPS can be used in preparing his formal, written plan.

Although KBLPS is primarily focused on corps-level operations, the model logic possibly could be adapted to provide a similar capability for the staffs planning the theater LOC encompassing all joint and component activities within the area extending from the reception complexes to the corps rear boundaries. The rules-based planning concepts documented in the proposed "Joint Theater LOC Planning Guide" could provide the foundation upon which such a tool could be developed. USTRANSCOM should develop such an automated tool for the JPEC and incorporate it into the AMP suite of tools.

USTRANSCOM should develop and incorporate into AMP an automated LOC planning tool based on the proposed Joint Theater LOC Planning Handbook and KBLPS concept to facilitate rapid contingency planning.

b. Automated Theater LOC Transportation Assessment Tools

There currently are two automated tools available to help analyze the capabilities of a theater LOC to move the planned deployment requirements. They are the Enhanced Logistics Intratheater Support Tool (ELIST) and the Scenario Unrestricted Mobility Model for Intratheater Simulation (SUMMITS).

(1) Enhanced Logistics Intratheater Support Tool (ELIST)

Summarized in Table IV-4, ELIST is an analytical tool that simulates, from a transportation perspective, the deployment of forces through the theater LOC. The system requires detailed input data on the theater LOC routes and available mode capabilities, and uses them as constraints for the flows. ELIST uses an object-oriented data base to model unit and host nation transportation assets and theater infrastructure. The theater transportation network is used to move personnel and cargo from theater reception complexes to final theater destinations.

Table IV-4. Current Automated Information Systems and Applications Supporting Theater LOC Development

Acronym	Name	Proponent	Users	Use	Remarks
ELIST	Enhanced Logistics Intratheater Support Tool	Army MTMC-TEA	USTRANSCOM HQ, MTMC, CINCs, CINC Components and Sub-Components	Discrete event, simulation-based system that evaluates the logistical feasibility of the theater transportation portion of a course of action. Models theater air, ground, and rail transport assets and transportation infrastructure with object-oriented database. Compares the planned theater arrival schedule against a theater's transportation assets, cargo handling equipment, facilities, and routes.	Part of the current AMP suite. Army is currently funding improvements to the model. Secret level.
SUMMITS	Scenario Unrestricted Mobility Model for Intratheater Simulation	OSD (PA&E)	OSD (PA&E) and JS J4	Evaluates the logistic feasibility of a proposed theater transportation course of action. Quantifies the total requirement for common-user theater transportation to deliver the specified force to its destination.	Very detailed model that requires considerable programming support to use effectively. Secret level.
LAD	Logistics Anchor Desk	Army Logistics Integration Agency	HQDA, USAREUR HQ, and other Army planners.	Two-computer system that allows logistics planners to determine the location and status of selected Army materiel inside and outside the theater of operations and, based on that information, plan the logistical force required to support a proposed course of action.	Parent system of KBLPS. Secret level.
KBLPS	Knowledge-Based Logistics Planning Shell	Army Logistics Integration Agency	HQDA, USAREUR HQ, and other Army planners.	Interactive Decision Support System (DSS) that assists logisticians in planning, allocation and transportation of Army support at the corps level. Built-in data base includes default information about corps-subordinate combat units, as well as the support slice usually allocated to the units.	Part of LAD. Used successfully by XVIII Airborne Corps to help plan Desert Storm operations, and by USAREUR to help plan and sustain Operation Joint Endeavor. Secret level.

Planners can generate movement scenarios for ELIST from TPFDD data, as well as from several other models, including DART, JFAST, and MIDAS. Movements are constrained by available theater transportation assets and the capacities of the theater infrastructure. ELIST is a user friendly system employing a graphical windowing system that integrates maps, data, and a variety of charts, reports, and graphs to show the results of the simulation. It is a valuable tool for assessing transportation feasibility of a planned theater deployment and can produce daily summaries of activities such as:

- Amount of cargo offloaded, waiting to offload, and waiting to move
- Facility clearance capacity and flow
- Road and rail intersection capacity and flow.

ELIST also can produce for each node for any given period a list of the times when the storage capacity at the facility was exceeded, but it currently does not disrupt or limit the flow because of this constraint. It provides a list of items to be moved to final destination nodes and identifies daily which items have arrived at the destination nodes.

ELIST also can be used during training to play out a Master Scenario Events List (MSEL). For example, the user can add or subtract transportation resources, further constrain link capacities to simulate enemy action, or close down specific ports to determine the effects of these actions on the overall simulated movement of forces and cargo within the theater transportation network.

ELIST does not plan a theater LOC; rather, it assesses the transportation feasibility of a proposed deployment through a user-specified theater LOC. The model currently has another serious limitation. It does not portray RSOI operations accurately and, as a result, provides overly optimistic estimates of closure times at final theater destinations. For example, ELIST currently does not:

- Directly simulate personnel moves
- Take into account situations where arriving unit personnel and equipment must be linked, e.g., when the unit drivers arrive at a joint aerial port and the equipment arrives at the joint water port
- Take into account the reassembly of units and forces, or marshaling and staging delays experienced by them during the deployment through the theater LOC
- Calculate workloads for theater LOC nodes, compare them with node capabilities, and restrict flows based on these constraints
- Simulate theater airlift movements and their connections to surface modes.

The latest version of ELIST does have the capability to delay for a user-defined period of time all units passing through a particular node. However, it cannot selectively delay some unit line numbers (ULNs) passing through a node while others are allowed to move onward, nor can it delay one ULN at a node until another ULN joins it at the same node, which would more accurately simulate the marshaling and staging activities of RSOI. These limitations result in unrealistic simulations of the joint RSOI operations in the theater LOC.

Although ELIST is still under development, it has been used to support planning for U.S. Forces Korea and U.S. Army deployments into Bosnia. The model, however, needs to add the capabilities described above to provide the supported commands and their components with an automated tool capable of assessing joint RSOI operations and the feasibility of planned theater deployments.

USTRANSCOM should enhance the capabilities of ELIST to incorporate accurately the RSOI, sustainment, and retrograde operations that occur within the theater LOC.

When ELIST incorporates the changes described, it will have the potential to assist geographic combatant command and component staffs with assessing the feasibility of planned deployments through the theater LOC. The staffs of geographic combatant commands and their components need to be trained in the operation of the enhanced tool through appropriate education and training opportunities.

USACOM should incorporate the enhanced ELIST into the Unified Endeavor exercise series and propose that it be incorporated into the curricula of the Armed Forces Staff College and appropriate Service schools to ensure future staffs are trained to employ the enhanced tool during deployment planning and execution.

(2) Scenario Unrestricted Mobility Model for Intratheater Simulation (SUMMITS)

SUMMITS was developed by the Director, Projection Forces, OSD (PA&E) to execute an intratheater deployment simulation based on inputs provided by the user. The simulation moves personnel, unit equipment, and supplies in accordance with defined requirements through a predetermined theater LOC. Requirements for transportation are processed in priority order, with each requirement being provided an assigned delivery path through established air, road, rail, water, and pipeline networks. Available transport resources are consumed as each requirement is applied to its assigned delivery path.

SUMMITS quantifies the total requirement for common-user transportation to deliver the specified force and the required logistics support using the established transportation resource assets. Also, the model quantifies the performance of the established transportation network and resource mix in providing timely delivery of the force to its final destination.

SUMMITS was used recently by the Joint Staff/J4 and OSD(PA&E) to conduct the Intratheater Lift Analysis for two MRCs. The model is not very user friendly because it records the very detailed transactions of the simulation and analysts must retrieve and

evaluate the data. A number of standard reports are routinely produced reflecting the transportation utilization for each commodity represented – usually personnel, unit equipment, sustainment cargo, ammunition, bulk fuel, and water. For example, the trips required per day for a particular vehicle type can be examined as a day-by-day requirement, a static average daily requirement over a fixed number of days per five day period, or a rolling average daily requirement over a fixed rolling average period. Other data can be extracted or generated as reports.

As with ELIST, SUMMITS cannot plan a theater LOC; rather, it assesses the feasibility of proposed deployment and sustainment concepts through a predetermined theater LOC. In addition to the input data needed by ELIST, SUMMITS also requires the theater campaign results to determine the locations where the unit personnel, equipment, and sustainment must be delivered as a function of time, intensity of combat, and friendly combat success; the combat consumption of all classes of supply played in the model; and a detailed theater logistics support plan.

Because SUMMITS initially was developed during the 1970s, it does not have user friendly graphics and output summaries comparable to those provided by ELIST. Moreover, the system is very detailed and complex to operate. It requires a technically competent staff or contractor support to set up the simulation, run the model, and analyze the detailed output. In addition, it shares with ELIST an inability to portray accurately many of the important RSOI operations. In particular, it does not model the reassembly of unit elements as they move through the LOC. While it does account for delays caused by loading, unloading, and waiting for transportation, SUMMITS does not model the delays for RSOI processing at the nodes. SUMMITS should not be incorporated into AMP without significant investments to make the system more user friendly and responsive to the deployment planners needs.

4. Linking Strategic and Theater TPFDDs

Although JOPES is used for planning and executing U.S. military deployments, several recent operations have highlighted a number of its limitations that impact on joint RSOI operations. The principal issue is the level of detail provided by JOPES. Because the system was designed to provide strategic deployment information, it deals in more aggregate data that do not provide the supported combatant command with the ability to plan or control the detailed joint RSOI operations within the theater.

For example, JOPES generates a movement requirement in the TPFDD – a unit line number (ULN) that may represent one of several increments of a unit to be moved from an origin to a final destination. The record contains the port of embarkation, port of debarkation, and one intermediate destination. The record also contains the mode of transport planned between these nodes of the LOC. Once the movement requirement arrives in theater, JOPES has inadequate visibility until it arrives at the final destination. If the supported combatant command is to plan and control joint RSOI, sustainment, and retrograde operations that occur within the theater LOC, the system must provide it with the detailed data reflecting the planned operations.

The level of detail needed by the supported command and its components could be retained in a separate, more detailed, theater TPFDD. The theater TPFDD records should match the JOPES strategic TPFDD records at four critical points to ensure linkage: (1) the ULN (and cargo increment number (CIN) and personnel increment number (PIN) for sustainment and retrograde flows), (2) port of debarkation, (3) final destination, and (4) arrival dates.

The theater TPFDD structure should provide for additional detail needed to plan and control the deployment through the theater LOC including the following data fields: (1) multiple intermediate destinations between the arrival location and final destination, (2) scheduled arrival and departure times at intermediate locations to reflect anticipated processing delays, (3) intermodal transfers at nodes, (4) a capability to disaggregate ULNs (as well as CINs and PINs) further to reflect capacities of theater transportation to move the requirement between nodes, and (5) the gaining command of the ULN so that force tracking is possible.

The more detailed theater TPFDD would provide the supported combatant command with the information it needs to plan and control the execution of deployments within the theater, but which JOPES does not now provide. Automated tools based on KBLPS could provide the supported combatant command and its components with a capability to develop the detailed theater TPFDD rapidly in response to an emerging contingency or during deliberate planning.

If the theater TPFDD capability were available, the supported combatant commands could use an enhanced version of ELIST to evaluate the feasibility of a deployment plan. The Joint Staff should evaluate the utility of extending the existing JOPES concept to include a more detailed, but linked, theater TPFDD to enable the

geographic combatant commands to plan and execute joint RSOI, sustainment, and retrograde operations more effectively and efficiently.

The Joint Staff, in coordination with the geographic combatant commands and USTRANSCOM, should evaluate the utility of the theater TPFDD concept, and if warranted, establish the requirement and develop the systems to provide the capability.

5. Node Planning Tools

Two automated tools are under development that will assist with planning operations at reception nodes of the theater LOC. The Base Resource and Capability Estimator (BRACE) can be used to model military air terminal operations to estimate the cargo that can be processed into and out of an airfield taking into account the physical characteristics of the facility and the operational capability of the air terminal operators. The Port Simulation (PORTSIM) model simulates activities within a water terminal and relies on another simulation, the Integrated Computerized Deployment System (ICODES), to develop ship loading plans. These tools are summarized in Table IV-5.

Table IV-5. Developmental Air and Water Terminal Simulation Tools

Acronym	Name	Proponent	Users	Use	Remarks
BRACE	Base Resource and Capability Estimator	Air Mobility Command	USTRANSCOM HQ, AMC, JFACCs, Air Staff Planners	Simulates airfield onloading, offloading, enroute, and recovery base operations, including ground activities such as cargo handling, refueling, maintenance, and aircraft parking. Estimates airfield throughput capability.	Currently in advanced development. May be incorporated into GTN. Unclassified.
PORTSIM	Port Simulation	MTMC	MTMC Terminals	Simulation of seaport operations during a force deployment. Provides a series of time profiles that show the usage of port lift assets, MHE, staging area capacities, force structure, number of vehicles loaded, and several other parameters.	Usually used in conjunction with unit moves. Interfaces with ICODES. Unclassified.
ICODES	Integrated Computerized Deployment System	MTMC	MTMC Terminals	Assists in the pre-stowage process by matching a vessel characteristics file against the cargo being offered for shipment to produce a vessel stowage plan. Calculates critical sailing characteristics, including trim and stability.	Usually used in conjunction with unit moves. Interfaces with DAMMS-R. Unclassified.

a. Air Terminal Planning Tool

BRACE is an automated planning tool being developed by Air Mobility Command to model activities within a military air terminal. BRACE simulates strategic or theater transport aircraft arrivals and departures, unloading and loading operations, ground transportation requirements for cargo movements between the ramp and the cargo storage area, and servicing requirements for the aircraft. The automated tool takes into account a number of factors such as runway capacity and availability, cargo handling capabilities, aircraft refueling and maintenance requirements, and aircraft parking limitations. The model can be used to:

- Estimate daily workloads processed at the air terminal
- Estimate aircraft loading/unloading, servicing, materiel handling, and cargo transfer and storage requirements to support a given level of strategic or theater airlift at an airfield
- Validate maximum (aircraft) on the ground (MOG) values used in existing air transportation models such as MASS and JFAST.

BRACE should be included as part of the planning tools available in the AMP suite. The model, however, currently operates as a stand alone simulation. The aircraft take off and land on the runway, taxi to and from parking areas, are serviced, and the cargo is loaded or unloaded from the aircraft and transported between the ramp and the adjacent cargo storage area. The RSOI workloads – which may be unit personnel and equipment, sustainment, or retrogrades – are not processed through the other nodes within the aerial port complex or connected to the theater LOC. The BRACE capability should be extended to include all RSOI, sustainment, and retrograde operations that will occur within the Joint Aerial Port Complex, including the flows of passengers; for example, the operation at the vehicle and helicopter assembly areas, marshaling areas, and various types of personnel holding areas that might be established within the complex. Furthermore, the BRACE capabilities should be integrated with those of ELIST so that arriving requirements can enter the theater LOC as onward movement requirements and retrogrades from the theater LOC can enter the Joint Aerial Port Complex for strategic movement.

USTRANSCOM should extend the capabilities of BRACE to include all RSOI, sustainment, and retrograde operations that occur within a Joint Aerial Port Complex, and link BRACE with ELIST to provide an integrated simulation capability for theater LOC requirements.

b. Water Terminal Planning Tool

PORTSIM is a time-stepped, discrete event simulation of water terminal operations. It provides a series of time profiles that show the utilization of berths and port cranes, materiel and container handling equipment (MHE/CHE), cargo staging areas, the number of vehicles loaded, and several other parameters. Currently, PORTSIM *loads* the ship in accordance with a loading plan developed by another automated tool – the Integrated Computerized Deployment System (ICODES). Using load planning factors obtained from a number of actual exercises, PORTSIM tracks loading activities at the line item number (LIN) level of detail. A recent enhancement enables it to simulate the *unloading* of a ship in a port.

PORTSIM uses three separate computers. One computer runs the simulation portion of the model, and displays the time profiles. The second computer is cued by the first computer to show 2-dimensional overhead pictures and drawings of the port area, as well as simple “cartoon” animations of what is going on in the port. The third computer is currently operated independently of the other two computers. This computer shows 3-dimensional views of the port area from any user-selected aspect. It allows the user to zoom in on parts of the port to see a computer-generated, 3-dimensional view of how the port would look from any particular place on the ground or in the air.

These attributes provide PORTSIM with a unique capability both to assess water terminal capabilities for a deployment, and to train personnel not only in general port operations, but also to familiarize them with the physical characteristics of a port in which they may operate during a future contingency deployment.

PORTSIM, like BRACE, is currently limited to modeling only terminal operations. The tool should be incorporated into AMP, but needs to be enhanced to account for all RSOI, sustainment, and retrograde operations that will occur within the Joint Water Port Complex during a deployment. The model also needs to be integrated with ELIST so that requirements arriving by sealift can enter the theater LOC as onward movement requirements and retrogrades from the theater LOC can enter the Joint Water Port Complex for evacuation.

USTRANSCOM should extend the capabilities of PORTSIM to include all RSOI, sustainment, and retrograde operations that occur within a Joint Water Port Complex, and link PORTSIM with ELIST to provide an integrated simulation capability for theater LOC requirements.

c. Planning Tools for Other Theater LOC Nodes

At the present time, there are no manual or automated tools to assist staffs with planning the other types of nodes that are likely to be found in the theater LOC. The proposed "Joint Theater LOC Planning Guide" should describe the functions performed at these locations, the physical characteristics of these nodes, and the various resources that might be used to operate them. When such a guide is developed, staffs will have a manual tool to support their planning activities.

Many of these nodes will be quite large, covering several hundreds of square kilometers with thousands of troops and vehicles. It may be necessary to develop automated tools that simulate the activities that occur within these nodes so their impact on the deployment process can be understood and quantified. Any automated tools that are developed should be interfaced with ELIST as has been suggested for BRACE and PORTSIM.

USTRANSCOM, in coordination with the combatant commands, should investigate the need for developing automated tools within AMP that can simulate activities at other nodes of the theater LOC. Tools for which there is an identified requirement should be developed, including the interface between these tools and ELIST.

6. Combined Forces Planning and Execution Tools

The U.S. is a member of NATO and currently has some of its forces deployed as part of the NATO Implementation Force in Bosnia. The Allied Command Europe (ACE) Command and Control Information System (ACCIS) and the ACE Deployment and Movement System (ADAMS) are two systems that are in wide-spread use among NATO military headquarters and the forces of member countries. These systems have been used by U.S. forces during combined exercises and operations with NATO forces and will likely be used in future contingency operations both within and outside NATO's traditional AOR.

a. ACE Command and Control Information System (ACCIS)

ACCIS is the primary NATO system used by the Supreme Allied Commander Europe (SACEUR) to exercise command and control over the activities of allied forces in the ACE area of responsibility or during out of sector deployments. ADAMS is one of its several components and is the principal element of concern to joint and combined RSOI operations.

b. ACE Deployment and Movement System (ADAMS)

ADAMS is a developmental system intended to fulfill the requirements for a joint and combined reception and movement system within NATO. It is a personal computer-based system that processes data up through the NATO SECRET classification. Its planned configuration is shown in Figure IV-1. The structure of ADAMS recognizes that many nations already have national automated deployment systems. Its function is to facilitate the exchange of movement plans, situation reports, and associated background data in agreed formats between the national automated systems and allied headquarters.

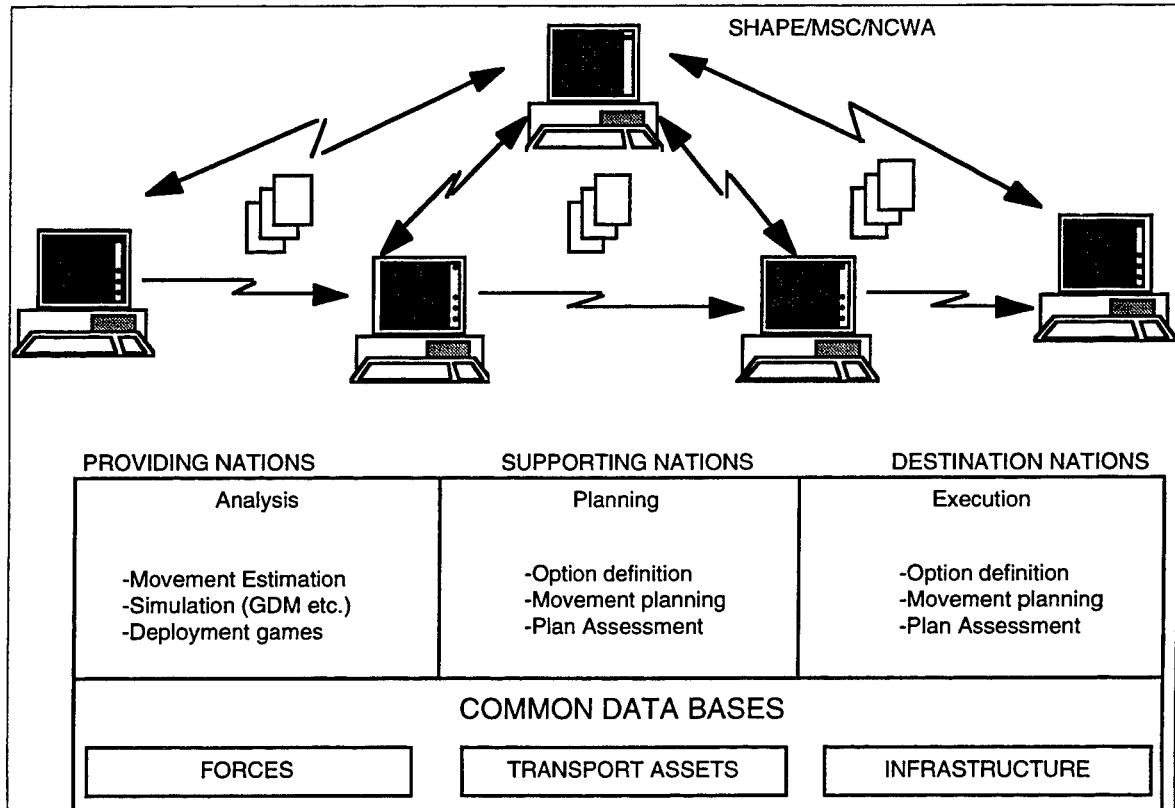


Figure IV-1. The Allied Deployment and Movement System (ADAMS)

There is no central data base envisioned for ADAMS. Instead, the data elements reside with the parent nation or force headquarters. The data are transmitted to other users in a standard format on an as-required basis. The development to date has focused on data and planning requirements.

Although the final configuration of ADAMS is still evolving, it currently includes the following modules:

- Force Selection
- Rough Planning

- Detailed Planning
- Force Data Bases
- Assets Data Bases
- Infrastructure Data Base
- Deployment Display.

The current version of the system is available at all national headquarters, and at Supreme Headquarters Allied Powers Europe (SHAPE), the three Major Subordinate Command (MSC) headquarters, the ACE Rapid Reaction Corps (ARRC), and NATO's Reaction Forces Air Staff (RFAS). It was used by SHAPE to coordinate combined movements during the Operation Joint Endeavor deployment through Croatia and into Bosnia. The connectivity between U.S. systems (JOPES) and ADAMS is retained at USEUCOM headquarters. Procedures have been established at USEUCOM headquarters that enable ADAMS and JOPES to exchange combined force TPFDDs, and this was accomplished successfully during Operation Joint Endeavor. Future ADAMS developments include the addition of more capable analysis tools and capabilities to monitor deployment executions.

C. DATA REQUIREMENTS TO SUPPORT JOINT RSOI PLANNING AND EXECUTION

Information is needed both to support initial planning for the theater LOC and the operations it will support, and to replan the deployment during execution. This section discusses both information types.

1. Information Needed to Plan Deployment Operations

One of the early actions of combat forces is "information preparation of the battlefield." There is a similar requirement for "information preparation of the rear area" where the theater LOC will be established to enable the forces to arrive in the operational area. Theater-specific data are needed to identify the possible configurations of the theater LOC nodes and links, and the organizations to operate the LOC. This information should be as current as possible and include at least the following items:

- Which nodes already exist in the theater of operations (e.g., ports, airfields, railheads), and what are the maximum capabilities of the facilities at each of these nodes to support joint RSOI, sustainment, and retrograde operations.
- Which nodes do not exist (e.g., staging and marshaling areas, convoy support centers) and must be established during the deployment.

- What are the essential and desired characteristics of each node to support the deployment concept.
- Which host nation facilities might be used as nodes and what are their potential capacities.
- When and how much of the available capacities of nodes and links will be made available to U.S. forces.
- Which non-U.S. military resources will be available to open and operate the nodes and modes of the theater LOC.
- What is the environment (e.g., threat, terrain condition, weather).

The data required to produce this type of information have not been clearly defined. MTMC's Transportation Engineering Agency (TEA) has the technical expertise that could define essential parameters for assessing node and link capacities and provide reasonable default values to be used as inputs for automated systems when data are not available. The geographic combatant commands and their components, however, should establish the characteristics of the nodes they anticipate establishing (e.g., physical dimensions of marshaling and staging areas, convoy support centers) in their AORs. The commands also need to make assessments of the resources host nations are likely to provide, as well as the constraints that might be imposed when a theater LOC is established.

There currently is no agency designated to develop a data collection plan to ensure that both priority requirements for deployment planning information are met and the efforts of the many participating organizations are not duplicative. These data currently are available from several sources, although the classification levels of these data and the currency of the data varies with the source. Some sources of data are:

- Airfield Data: Host Nations, Air Mobility Command (AMC), National Imagery and Mapping Agency (NIMA), Defense Intelligence Agency (DIA), and the Joint Intelligence Center USTRANSCOM (JIC TRANS); classified JOPES data files; and many unclassified commercial sources.
- Seaport Data: Host Nation, DIA, MTMC, NIMA, Military Sealift Command (MSC), MTMC-TEA, JIC TRANS; classified JOPES data files, and many unclassified commercial sources.
- Theater LOC Node, Link, and Mode Data: Each combatant command's JIC and host nation support element, MTMC-TEA, U.S. Army Waterways Experimentation Station-Vicksburg, U.S. Army Logistics Integration Agency (LIA), DIA, potential host nations, input files to current LOC planning tools, and many unclassified commercial sources.

A single agency should be designated to ensure these data are defined, systematically collected, maintained current, processed into needed information, and made available to combatant commands and their components when required. A single repository of data is probably not required. Instead, specific agencies could be designated to collect and maintain current portions of the required data. Customers could access the data when required. Because U.S. forces are often employed in combined contingency operations involving both allied military and civilian organizations, data classification is another important consideration that information providers must consider along with accuracy and timeliness.

The JIC TRANS recently co-hosted the fourth "Worldwide Transportation Information Conference" with DIA and NIMA. Two of the goals of the conference were to identify potential sources of data and to ascertain customers' requirements. JIC TRANS should continue with this effort and take the lead for establishing a transportation planning information network of agencies to satisfy the requirements of the geographic combatant commands.

USTRANSCOM should develop a transportation planning information network to satisfy the requirements of the supported combatant commands.

2. Information Needed to Replan During Execution

Once execution begins, there is little doubt that the original deployment plan will need to be revised. Several factors can cause revisions. Unexpected transportation delays, equipment breakdowns, enemy action, changes in priorities, adverse weather, and political decisions are some of the factors that can cause a deployment plan to be revised. While it is not possible to anticipate all of these factors in the original plan, comprehensive and thorough initial planning will form a sound basis for replanning.

However, another element is necessary. The combatant commander and his staff must be able to see what has already occurred and to predict what is likely to occur in the near future. Timely and accurate information reporting on key activities planned for the deployment is an essential ingredient for accomplishing replanning.

Replanning should be accomplished using the same suite of tools used for the initial planning. The source of timely and accurate execution information is the Global Transportation Network (GTN) being developed by USTRANSCOM. This command and control system is intended to provide integrated and automated support for planning and executing common-user intertheater and theater air, ground, and sea transportation,

as well as terminal services that deploy and sustain the force. To date, the GTN extends only to the Joint Aerial or Water Ports within the theater. Future versions of the system are intended to extend beyond the ports to other nodes in the theater LOC.

GTN will provide USTRANSCOM's customers access to either classified or unclassified transportation and deployment information using either a GCCS workstation, or a personal computer linked to either the NIPRNET (the Non-classified Internet Protocol Router, the DoD version of the unclassified Internet) or the SIPRNET (the Secret Internet Protocol Router, the DoD classified Internet). The system will assist in providing the user's Intransit Visibility (ITV) requirements through user-controlled views of integrated transportation data, which include combinations of mode, locations, dates, and status with a variety of unit, force, cargo, passenger, and patient identifiers.

When fully operational in 1999, GTN will support the four functional areas shown in Figure IV-2. These areas are:

- **Intransit Visibility:** Provides transportation information about units, unit passengers, cargo, patients, schedules, and actual movements.
- **Current Operations:** Displays asset information and provides collateral transportation intelligence information on airfields, seaports, and transportation networks such as rail, highway, air, and inland waterways using graphics and imagery.
- **Future Operations:** Provides information and models to support transportation planning, feasibility determinations, and courses of action.
- **Patient Movement:** Supports efficient routing and provides ITV of individual patients.

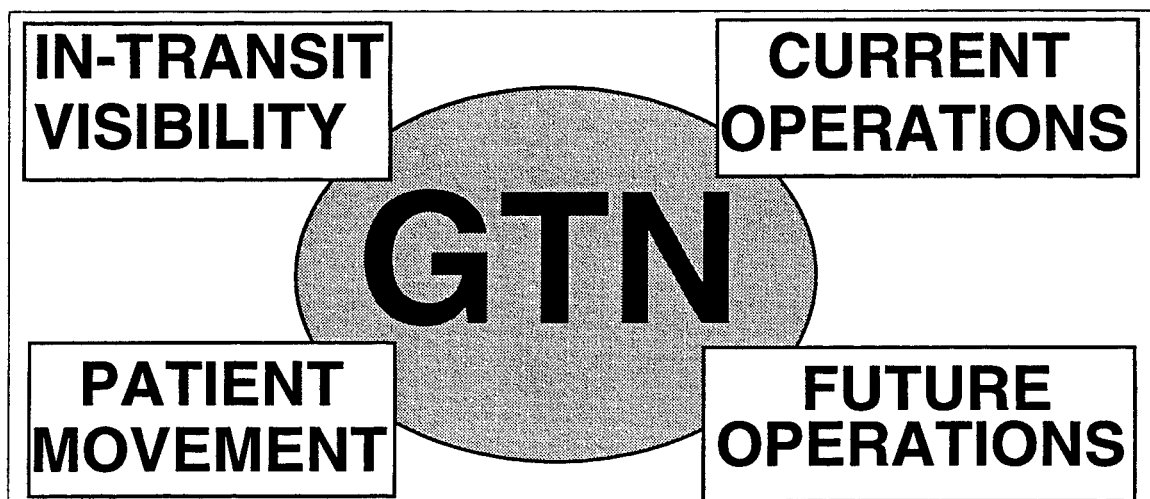


Figure IV-2. Global Transportation System Functional Areas

GTN will provide this information by connecting with and integrating the information contained in the network of systems shown in Figure IV-3; integrating these data; and producing information useful to the commanders and staff executing joint RSOI, sustainment, and retrograde operations. Information about the reporting and execution systems shown in the figure are discussed in Chapter V.

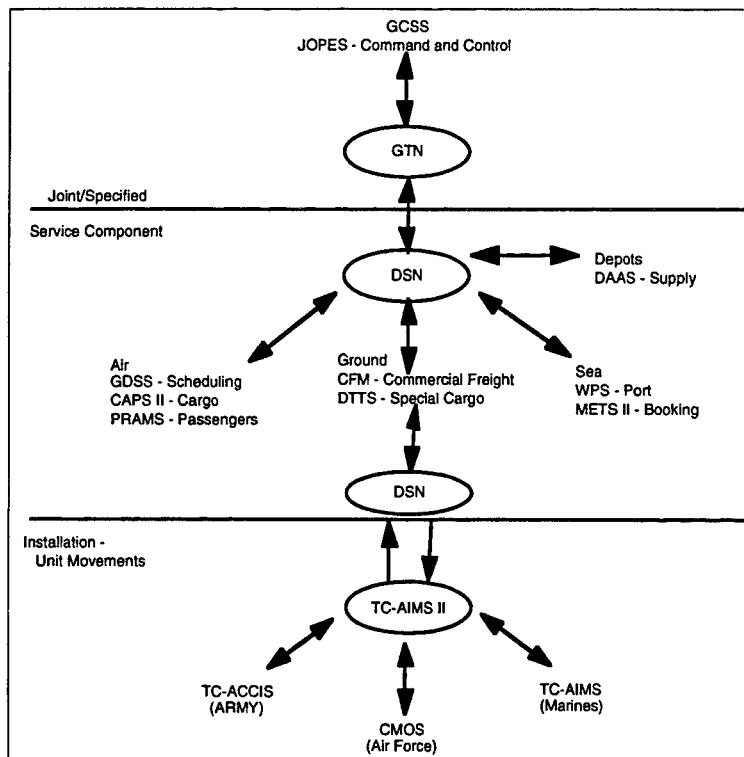


Figure IV-3. Global Transportation System Source Systems

Because ELIST currently does not interface with the Global Transportation Network (GTN) systems such as the Consolidated Aerial Port Subsystem II (CAPS II) or the Worldwide Port System (WPS), it has only limited utility for replanning during deployment execution. The interface between GTN, ELIST and other systems should be established to enable the supported combatant commands to replan deployments during execution. As other systems – particularly TC-AIMS II – become operational beyond the reception complexes, their outputs also should be integrated with ELIST during deployment operations to increase visibility into the flows, and to provide a real-time replanning capability throughout the theater LOC.

USTRANSCOM should develop procedures to interface the enhanced ELIST with appropriate GTN systems to provide a real-time RSOI replanning capability during deployment execution.

CHAPTER V

RSOI REPORTING SYSTEMS AND SUPPORTING DATA

V. RSOI REPORTING SYSTEMS AND SUPPORTING DATA

The previous chapter introduced the need for timely and accurate data reporting during deployment execution. These data provide commanders and staffs with information needed to monitor the RSOI, sustainment, and retrograde operations and to enable them to replan and direct changes that may be required. The two terms *data* and *information* are used throughout this chapter; their approved definitions are as follows:

Data – A representation of fact, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. Any representation such as characters or analog quantities to which meaning is or might be assigned. (Source: Joint Pub 1-02)

Information – The meaning that a human assigns to data. (Source: Joint Pub 1-02)

This chapter provides more detailed descriptions of currently available systems or those under development that are intended to provide these data. It also identifies areas where improvements are needed to ensure effective and efficient operations during future contingencies. It concludes by focusing on the reporting systems needed forward of the reception complexes, and discusses the movement control architecture, introduced in the movement control organization discussion in Chapter III, to collect and process the data into information.

A. BACKGROUND

The Defense Transportation System (DTS) provides common-user transportation support to the subordinate organizations of the Department of Defense in peacetime and during contingencies. The DTS includes military and commercial assets, services, and systems that are organic to, contracted for, or controlled by the DoD. The U.S. Transportation Command was established as the functional combatant command with the mission to provide common-user transportation support. The Global Transportation Network (GTN) is the automated support currently under development that will enable USTRANSCOM and its components to manage global transportation support in peacetime and during contingency operations. The network is intended to provide integrated transportation data and automated support systems necessary to accomplish

planning, command and control of transportation resources, and in transit visibility of transportation requirements.

The DTS operates in peacetime much like the commercial industry and moves a cargo requirement between an origin and a destination. Individual passengers, for the most part, are moved by commercial means. Normally, these movements are between fixed locations (terminals) with resident organizations that provide the movement requirement to the DTS mode operator at the origin for onward movement or receive it from the operator at the destination. These shipping and receiving organizations (node operators) are supported by commercial or DoD communications capabilities connecting them with mode operators and movement control organizations, and these capabilities enable them to plan and track shipments.

The GTN systems normally operate at the unclassified level because the movement requirements are often transported by commercial carriers, and the facilities, routes, and services to accomplish movements must be coordinated with civilian agencies. The GTN also must record detailed data needed to bill customers for the transportation under provisions of the Defense Business Operations Fund – Transportation (DBOF-T). Automated technologies such as bar code scanners and radio frequency tags have improved documentation of requirements and can provide an automated enroute tracking capability for cargo.

When military forces deploy to contingencies, the units (passengers and cargo) become the movement requirement. Contingencies often require deployments to locations (nodes of the theater LOC) where receiving organizations (node operators) are not already resident and must be established before reception can occur. Moreover, communications capabilities often are not readily available or sufficiently robust at many of these locations; they too must be established or augmented with military capabilities deployed with the force.

USTRANSCOM has been successful in extending the GTN from the fixed locations in CONUS into overseas theaters during contingency deployments, but these capabilities currently end at the terminals within the reception complexes – the point where responsibility passes to the supported combatant commander. The organizations and systems used by the DTS to operate air and water terminals in CONUS and OCONUS are well defined and have been developed by, or in conjunction with, the Services responsible for their fielding.

Beyond the air and water terminals, however, the solutions for establishing similar capabilities for the supported combatant command are more difficult for a number of reasons. As discussed in Chapter III, few standard organizations have been identified to operate the nodes of the theater LOC during a contingency. The *ad hoc* task forces have not always been trained to accomplish their node operation or data collection and reporting tasks, and they usually are not equipped to collect and report data. Furthermore, the data collection and reporting requirements have not been specified, and there is little joint doctrine available to guide GTN system developers with establishing systems in the theater LOC where RSOI, sustainment, and retrograde operations are planned to occur.

B. CURRENT AND PLANNED THEATER REPORTING SYSTEMS

Several Service-unique reporting systems that collect and maintain information about various portions of joint RSOI, sustainment, and retrograde operations are currently in-place or under development. For example, the Air Force (Air Mobility Command) uses the Consolidated Aerial Port Subsystem II (CAPS II), the Cargo Movement Operations System (CMOS), and the TRANSCOM Regulating and Command and Control Evacuation System (TRAC²ES) to monitor and control passenger, cargo, and patient movement activities at the air terminal. The Army (MTMC) uses the Worldwide Port System (WPS) to monitor and control activities at the water terminal, and the Army component command employs the Department of the Army Movement Management System-Redesign (DAMMS-R) to manage common-user surface movements through the theater LOC.

1. Systems Used at the Joint Aerial Port Complexes

Some of the overseas Joint Aerial Port Complexes used by U.S. forces are located at Main Operating Bases (MOBs) such as Osan Air Base, Ramstein Air Base, or Incirlik Air Base, and are used during both peacetime and contingency operations. These air terminals normally have units from Air Mobility Command stationed on site with the cargo and passenger tracking systems that are available at most CONUS air terminals.

When the designated Joint Aerial Port Complex is a host nation airfield used to support a contingency operation, Air Mobility Command will deploy a Tanker Airlift Control Element (TALCE) and other Global Reach Laydown Package (GRLP) supporting elements to the terminal to control, coordinate, process, and monitor U.S. airlift operations. In this situation, force and cargo tracking tools normally will be

deployed as part of the AMC deployment package. These support packages include a number of automated systems that are part of the GTN.

a. Consolidated Aerial Port Subsystem II

The Consolidated Aerial Port Subsystem II (CAPS II), an Air Force system, is used at air terminals to track air movements of all passengers and cargo. As summarized in Table V-1, CAPS II has four components:

- Aerial Port Documentation and Management System (ADAMS) III.
- Passenger Automated Check-in System (PACS).
- Enhanced Airlift Reporting for Logistics and Operations (EARLO) system.
- Passenger Reservation and Manifesting System (PRAMS).

Table V-1. Current CAPS II Applications Available at Air Terminals

Acronym	Name	Proponent	Users	Use	Remarks
CAPS II	Consolidated Aerial Port Subsystem II	Air Mobility Command	Air Terminals	A system of systems that assists Joint Aerial Port air terminal personnel with tracking passenger and cargo movements by air.	Unclassified system.
ADAMS III	Aerial Port Documentation and Management System	Air Mobility Command	Air Terminals	Tracks cargo and provides automated cargo processing using microcomputers in conjunction with either hand-held terminals or light-pen wands. Assists air terminal managers in selecting cargo for movement and making other load planning decisions.	The cargo portion of CAPS II. Unclassified system.
PACS	Passenger Automated Check-in System	Air Mobility Command	Air Terminals	Tracks personnel on strategic airlift and provides boarding passes. Speeds passenger check-in, seat selection, money collection, and boarding pass preparation.	The passenger portion of CAPS II. Unclassified system.
EARLO	Enhanced Airlift Reporting for Logistics and Operations	Air Mobility Command	Air Terminals	Used by air terminal personnel to update various AMC logistic and operational data bases with information on arrival/departure times, mission/schedule changes, and aircraft delay/repair status.	Part of CAPS II. Unclassified system.
PRAMS	Passenger Reservation and Manifesting System	Air Mobility Command	Air Terminals	Schedules the movement of DoD-sponsored personnel via DBOF-T funded aircraft. Produces and transmits passenger manifests for departing flights.	Part of CAPS II. Unclassified system.

Combined, these four components of CAPS II provide the air terminal operator with automated support needed to track cargo and passenger movements into and out of the terminal. These components of CAPS II do not provide for onward movement by other modes.

b. Cargo Movement Operations System

The Cargo Movement Operations System (CMOS) is described in Table V-2. This Service-unique system is complementary to CAPS II, and is used to support the deployment of Air Force units and their accompanying materiel by airlift from their home stations to the contingency air terminal. CMOS assists deploying units with generating air manifests and route orders to enable them to arrange adequate transportation to destinations in theater. Much of the information that is input into CMOS is of direct use to CAPS II and, in most instances, can be transferred directly into CAPS II.

Table V-2. Current Airlift Control Systems

Acronym	Name	Proponent	Users	Use	Remarks
CMOS	Cargo Movement Operations System	Air Force	Air Force bases	Supports the deployment of Air Force units and accompanying equipment and generates movement data to manage the deployment process. Provides in transit data transmission and tracks cargo status. Produces backlog reports, air manifests, and route orders.	Currently being integrated into TC-AIMS II. Unclassified.
TRAC ² ES	TRANSCOM Regulating and Command and Control Evacuation System	USTRANSCOM	USTRANSCOM HQ, Air Mobility Command HQ, Aeromedical Evacuation Units, and Medical Treatment Facilities.	Regulates, schedules, and monitors the evacuation of patients from the theater of operations to medical facilities outside the TO.	TRAC ² ES is an interim system. Its successor is FLYAWAY1, which will provide enhanced capabilities. FLYAWAY1 is scheduled to be deployed in late CY96. Unclassified.

c. TRANSCOM Regulating and Command and Control Evacuation System

One of the high priority retrograde flows from a theater is likely to be patients. Medical evacuation from theater air terminals is currently managed by the TRANSCOM Regulating and Command and Control Evacuation System (TRAC²ES), also described in Table V-2. TRAC²ES integrates bed, lift, and patient data as well as projected flight schedules (obtained from GTN) to develop a patient movement plan. In addition, TRAC²ES identifies potential bottlenecks and shortfalls, and tracks individual patient status and movement through enroute locations.

The second operational prototype of TRAC²ES has been deployed to USEUCOM, while the main kernel currently is being tested at the Scott Air Force Base "Global

Center.” The successor to TRAC²ES, called FLYAWAY1, was distributed to the USTRANSCOM and USEUCOM command surgeons in February 1996, and a USEUCOM theater-level capability is scheduled for delivery in late 1996. This system (and its follow-on) will be operated by the AELT deployed to the reception complex, usually located in the vicinity of the air terminal. This system is included within GTN. While it provides for the strategic movement and tracking of patients, it also must interface with the Service component systems that identify the patient evacuation workloads that must be transported from the theater.

d. Department of the Army Movement Management System-Redesign

The Department of Army Movement Management System-Redesign (DAMMS-R) supports surface movements management, transportation operations, and the allocation of transportation resources within a theater of operations. DAMMS-R is a Service-unique system that has been under development for a number of years, and two different versions have been fielded with forward stationed Army forces. This system is one of many Standard Army Management Information Systems (STAMIS), but it is used primarily from Army division through theater echelon to manage surface movements by common-user or organic means. The Army's Air Terminal Movement Control Team (ATMCT) typically will deploy with the capability to access DAMMS-R so that cargo and convoy movements into or out of the air terminal can be processed effectively and efficiently.

DAMMS-R is a central processor with communications links to reporting locations. Normally operated by the TAMCA, it is composed of seven modules that allow the user to perform many tasks in the AOR. However, it should be noted that different configurations of DAMMS-R have been deployed to forward stationed Army component organizations (Block 1 to USEUCOM and Block 3 to U.S. Forces Korea), and each version currently provides users with different capabilities. These modules and their functions are:

- Mode Operations (Block 1) – Schedules missions and maintains data on missions and costs.
- Movement Control (Block 1) – Receives forecasts and allocates resources.
- Shipment Management (Block 1) – Traces, holds, diverts, and expedites cargo, as well as forecasts to provide Intransit Visibility.
- Transportation Addressing (Block 1) – Maintains addresses and unit locations.

- Convoy Planning (Block 3) – Plans road movements.
- Highway Regulation (Block 3) – Approves routes and schedules, and deconflicts convoy movements.
- Operational Movement Programming (Deferred) – Maintains theater surface distribution plans.

System interfaces between DAMMS-R and other automated planning and execution information systems are shown in Figure V-1. Some of these interfaces already have been completed, but others are planned for completion during FY97 as shown in the figure. DAMMS-R currently can exchange data with CAPS II, and has a similar capability with CMOS and GTN.

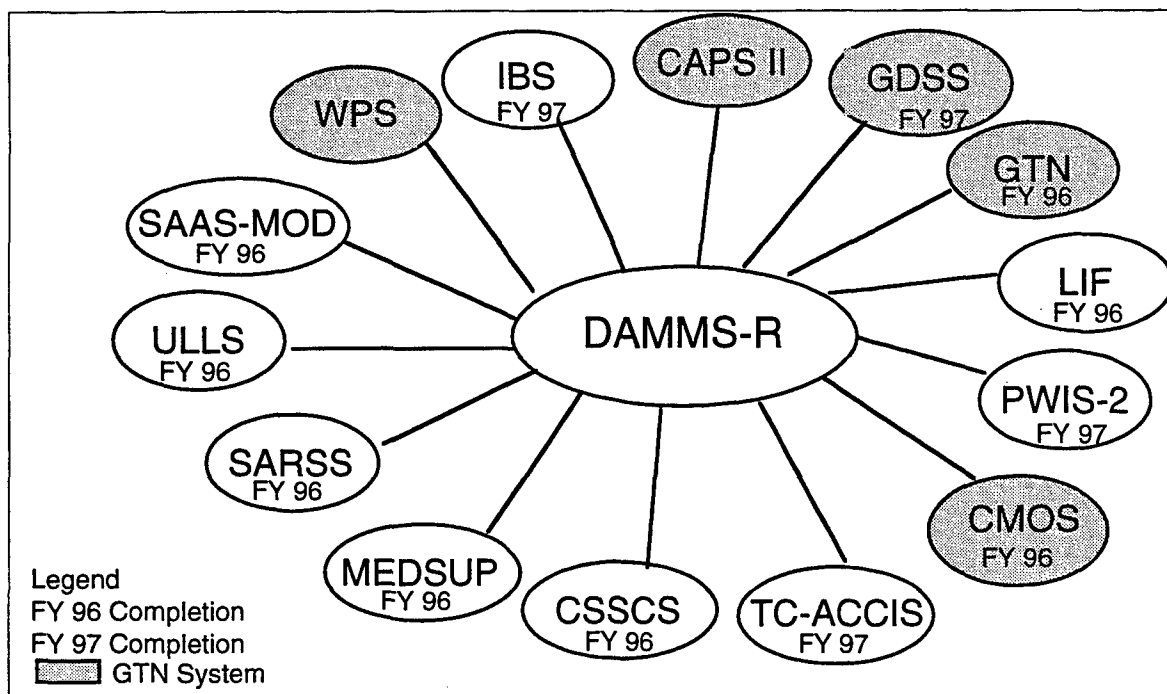


Figure V-1. DAMMS-R Automated Interfaces

The system still has a number of shortfalls that make it unable to collect and process joint RSOI, sustainment, and retrograde movement data, and provide ITV and force tracking information to commanders and staffs for the joint force. It will be replaced by the system described below.

e. Transportation Coordinator's Automated Information Management System II

The evolving DAMMS-R provides an interim capability to control movements from the air terminal to final destination in the theater. An improved system that will

include many of the DAMMS-R capabilities currently is under development – the Transportation Coordinator's Automated Information Management System (TC-AIMS II). This is a joint system being developed by the Army, as executive agent, with the Marine Corps leading the definition of system requirements. As shown in Figure V-2, this effort also will integrate the features of the Army's Transportation Coordinator's Automated Command and Control Information System (TC-ACCIS), the Air Force's Cargo Movement Operations Systems (CMOS), the Marine Corps' Transportation Coordinator's Automated Information Management System (TC AIMS-MC), and the Navy's Transportation Coordinator's Automated Information Management System (TC AIMS-N) into a new, standard system that can be used by all of the Service components.

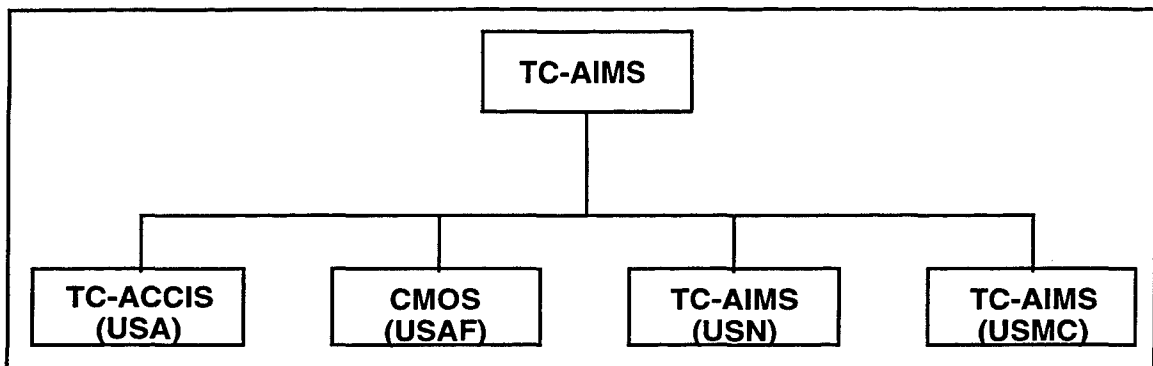


Figure V-2. TC-AIMS II

The current Service-specific systems are used to prepare unit equipment for shipment, as well as produce unit equipment lists and standard bar code labels to be affixed to the individual items of materiel contained in each shipment. These systems generate data to meet the following requirements:

- Unit movement data to the JOPES
- Data for Government Bills of Lading (GBLs)
- Convoy clearance requests
- Unit movement data to enable the DTS organization to plan strategic and theater movements.

The Army's TC-ACCIS was developed primarily for use in CONUS, and the interface with JOPES is through Headquarters, Forces Command (FORSCOM). Unit data generated by TC-ACCIS is transmitted to FORSCOM by way of the Defense Data Network (DDN). FORSCOM then uses the Army-unique Computerized On-line Movement Planning and Status System (COMPASS) program to convert the data into a format that can be read into JOPES.

The Marine Corps version of TC-AIMS, on the other hand, was designed to support planning and execution for movements of forces from origin to port of embarkation and then port of debarkation to final destination. This system provides the Marine Corps interface with JOPES and performs the following functions:

- Transportation sourcing
- Highway movement planning
- Critical event tracking
- Resource management
- Rail planning
- System administration.

2. Systems Used at the Joint Water Port Complexes

In most ports used by forward-stationed combatant commands in peacetime, the responsibility for the water terminal operation is assigned to the senior MTMC command present, usually a Medium Port Command (MPC). In these terminals, the MPC employs the Worldwide Port System (WPS) as part of the GTN, and will be supported by an Army MCT with access to DAMMS-R. During contingency deployments, a MTMC team will need to be deployed to the designated water terminal with WPS to ensure connectivity with GTN. In addition, an Army MCT with access to DAMMS-R (or TC-AIMS II) capability also will be required to control movements within the water terminal as well as those into or out of the water terminal.

The Worldwide Port System replaces the MTMC Terminal Management System (TERMS), the Department of the Army Standard Port System-Enhanced (DASPS-E), and the unit move Terminal Support Module (TSM). WPS is a transportable, stand-alone system designed to provide real-time cargo terminal operations and cargo documentation capability to the water terminal commander. It supports automated cargo accounting, documentation, manifesting, and other related water terminal operations. WPS also provides ITV for both unit and non-unit related cargo, produces a number of reports needed for terminal operations, and interfaces with the Military Standard Transportation and Movement Procedures (MILSTAMP) Ocean Cargo Manifest system.

The WPS and DAMMS-R already have established an automated interface and can exchange data to facilitate onward movement of arriving materiel and processing of retrograde flows through the water terminal.

When the Marine Corps deploys its personnel to a water terminal to reassemble them with maritime prepositioned equipment, these personnel employ the Marine Air Ground Task Force (MAGTAF) Deployment Support System II (MDSS II). This system is a unit-level deployment planning and execution support system that enables the commanders and staff of the deploying force to prepare and execute detailed embarkation plans. At the debarkation terminal, the system also provides sufficient asset visibility to allow commanders to control the arrival and reassembly of the unit personnel, equipment, and accompanying supplies. This system has standard automated interfaces with both joint systems and other Marine Corps systems. Surface movements of Marine Corps units through the theater LOC, however, will need to be processed by DAMMS-R (or TC-AIMS II in the future) to ensure these requirements are deconflicted with other common-user or unit movements also planned for the same routes.

C. OTHER THEATER LOC REPORTING SYSTEMS

Beyond the air and water terminals, the arriving movement requirements will need to flow through a number of other nodes as they undergo RSOI operations or satisfy sustainment requirements. Retrograde movements flow in the opposite direction; originating at nodes of the theater LOC, they move along the same or similar routes to the terminals for subsequent evacuation from the theater.

The movement controllers need visibility for these operations so that requirements can be prioritized, modes can be tasked, and routes deconflicted. Similar information is needed by the node and mode operators so they can process their workloads effectively and not incur backlogs, cause congestion, or delay the flows. Commanders and staffs at all echelons also require timely and accurate information about specific units or movement requirements. ITV, TAV, and force tracking each depend on timely and accurate information. To obtain this information, it is essential that a data collection and reporting structure be planned and established for each theater LOC. The evolving DAMMS-R system does not currently provide the needed capabilities for joint data collection, reporting, and processing. The development of TC-AIMS II can provide such a capability for a standard system, and the combatant commands and their components should support its development and stress the urgency of the required operational capability.

USACOM, in coordination with the other combatant commands and their components, should actively support the Army's development of TC-AIMS II to meet the urgent requirement to provide ITV and force tracking beyond the theater air and water terminals.

Currently, only one system, the Standard Theater Army Command and Control System (STACCS), has been developed for the primary purpose of tracking deploying force movement in a theater of operations. Previously known as the U.S. Army Europe (USAREUR) Tactical Army Command and Control System (UTACCS), STACCS is a transportable, theater-wide system designed to provide automation support to theater army headquarters, its major subordinate commands, and corps headquarters. It has only been employed in the USEUCOM AOR. The system serves as the bridge between Army strategic and operational echelons, and provides the theater headquarters elements with e-mail, data communications, local and shared data base management, situation map graphics, word processing, report generation, application and decision support tools, and network and system management.

Of particular interest to the joint RSOI operations are two STACCS applications. The Movement Control and Readiness Reporting (MCRR) application provides tracking information for movements within the theater of operations based on input from subordinate units that are involved with the reception and onward movement of incoming forces. MCRR also will accept TPFDD information from JOPES, and provides the means for preparing a theater TPFDD at the Secret level.

The Headquarters Force Tracking (HFT) application provides headquarters elements with the capability of exercising command and control of the deployment, reception, and onward movement of forces deploying into, within, and from the theater. HFT integrates and displays information received from subordinate units in a manner that facilitates both force tracking within the theater and accurate predicting of unit time of arrival at important theater LOC nodes.

The STACCS, rather than DAMMS-R (Block 1), was employed by USAREUR during Operation Joint Endeavor to provide commanders and staffs with information on the deployment of Army forces. Because most of the deploying force already was forward stationed, STACCS terminals were issued to the non-deploying Area Support Groups (ASGs) and subordinate Base Support Battalions (BSBs) (node operators) where the deploying forces were stationed. Because the Army's version of TC-ACCIS was designed for CONUS operations, it could not be used to support this rapidly evolving contingency deployment. Units developed and provided movement requirement input data manually, with little quality control.

At the departure end of the theater LOC, these organizations set up elements at the railheads, where most of the unit equipment was loaded, to report when shipments

were loaded and "trains" departed. This reporting usually was accomplished by telephone to the local STACCS operator where it was entered into the system. The "train" that departed the railhead, however, was then moved to a classification yard where the railcars were reassembled into a "train" that was then moved by the rail system to its international border. As a train passed from one country to the next, it often was necessary to adjust the number of railcars in the train to account for technical clearance capabilities of the host nation rail system. Consequently, it was very unlikely that the "train" that departed the railhead and that was reported to STACCS was the same "train" that arrived at the destination. The current STACCS capabilities do not allow for these enroute adjustments.

Commanders of deploying units were to report convoy departures to the home station STACCS element, and this was usually done by telephone or radio from a predesignated first destination reporting point (FDRP). Many of the personnel who shipped equipment by rail were transported to the contingency area by commercial bus; however, STACCS had no visibility into these movements. The departures were not reported to the STACCS element by the bus operators, but they could have been reported if a FDRP had been established in the commercial contracts.

STACCS tracks Army surface movements. Elements that deployed to the contingency area by theater air were tracked to the departure air terminal, but from that point on, tracking was the responsibility of the Air Force systems. Self-deploying Army helicopters were not tracked by STACCS.

STACCS terminals were not deployed to the intermediate nodes or final destinations. Instead, MCTs assigned to these locations were required to call in the arrivals of trains, convoys, and buses as they occurred at the destinations. They attempted to do so using cellular phones, their only means of communications. The data reported at the destinations, however, did not always reflect the data reported at the origins.

The STACCS system is operated at the Secret level, and few of the military or civilian personnel in the ASGs or BSBs were cleared. In addition, the few cleared operators were provided minimum training. The data collected and reported were incomplete, and both ITV and force tracking capabilities during the deployment were very limited.

Automated Radio Frequency (RF) tags also were used to track nearly 6,000 shipments during the deployment and subsequent sustainment operations through

September 1996. During the early deployment phase, most of the tracking was done for the Defense Transportation Tracking System (DTTS) by satellite through the Volpe Center, of the U.S. Department of Transportation. To reduce the cost, ground based interrogators have been carefully planned and a network of personnel and automated systems currently is being established. By December 1996, automated interrogators are planned to be placed at 51 separate locations. The management and coordination for this operation is the responsibility of the 15th Movement Control Battalion, and requires about 20 additional personnel in addition to communications capabilities to support the servers on the wide area net.

The geographic combatant commands and their components need to participate actively in the specification of TC-AIMS II requirements. The new system should incorporate the essential features of DAMMS-R, TC-ACCIS, STACCS, and MDSS II, and other features that the commands require to accomplish ITV and force tracking as joint RSOI, sustainment, and retrograde operations are executed. These requirements include tracking intermodal and intramodal shipments through the entire set of theater LOC nodes, and providing all of the information needed by commanders, staffs, and theater LOC operators. The system also should assist the commands with controlling the redeployment of the force once the operations have been concluded.

USACOM, in coordination with the other combatant commands and their components, should actively participate in the requirements definition for the TC-AIMS II system to ensure it produces the data collection, reporting, and processing system needed to exercise control over joint RSOI, sustainment, retrograde, and redeployment operations within the command's AOR.

D. THEATER MOVEMENT CONTROL ARCHITECTURE

In Chapter III, a movement control architecture, consisting of a geographically dispersed but integrated network of movement control units with reporting capabilities, was recommended for the theater LOC. This architecture would be planned and implemented by the proposed JMCA. Its purpose is to establish the theater reporting structure needed to collect, report, and process data into the information needed by commanders and staffs, as well as the LOC operators during a contingency.

A critical concern of the supported combatant commander is the need to deploy the most capable force at the decisive time and place. Resources to establish and operate the theater LOC, while necessary to ensure an effective and efficient build-up of force capability, compete for lift with the forces needed to carry out the assigned mission. To

minimize the resources required to operate the theater LOC, *the movement control architecture should be the single data collection, reporting, and information processing network established to meet the supported combatant command's requirements for both ITV and force tracking.*

1. Reporting Units

This architecture must be established using standard units authorized in the Service component force structures, not based on *ad hoc* task forces. Standard units with prescribed tables of organization and equipment can be equipped properly and their personnel trained to perform the tasks they will be expected to perform; in this case, data collection and reporting during a contingency deployment. The Army has a large number of movement control teams, ranging in size from 3 to 34 personnel, in its active and reserve components. These teams could be employed by the JMCA to perform the data collection and reporting tasks at nodes where joint, common-user, or Army-unique operations are planned to occur. The smaller number of movement control organizations fielded by the other Services could be employed by the JMCA at those nodes operated exclusively for that Service.

USACOM, in coordination with the other geographic combatant commands and their components, should identify the Service movement control units to be employed to establish the theater LOC movement control architecture.

Currently, most of the Army MCTs have no organic communications capabilities and this equipment should be provided. Many of the recent contingencies (see Table I-1) have theater LOCs that extend as much as 1,200 kilometers. Because these movement control units will deploy early during a contingency, they may need more communications capabilities than the typical Mobile Subscriber Equipment (MSE) provided to many Army units. High frequency radios or International Maritime Satellite (INMARSAT) systems would enable these teams to communicate over long distances from remote areas until other communications capabilities, such as MSE, are established to support the theater LOC.

USACOM, in coordination with the other geographic combatant commands and their components, should identify the communications capabilities required by the units of the movement control architecture to enable them to exchange data during contingency deployments through the various theater LOCs. USACOM should recommend to the appropriate Service that the required communications capabilities be fielded on a priority basis.

2. Reporting Locations

The reporting units must be physically located where critical activities need to be reported, especially those activities related to force tracking. These locations include the arrival air and water terminals within joint reception complexes, as well as the terminals operated to support the Service components. Beyond the terminals, other critical nodes include the Marshaling Areas where ULNs reassemble into units, Staging Areas where units reassemble into forces, and Tactical Assembly Areas where forces transfer authority and become integrated into the command's operation.

Other locations along the theater LOC also support RSOI, sustainment, and retrograde operations. These locations (e.g., Driver Holding Areas, Convoy Support Centers, Vehicle Assembly Areas) are nodes for which capacity may be limited, and where congestion and vulnerabilities are likely to occur. Visibility into the activities at these locations will be important so that the flows into and out of these nodes can be carefully controlled to avoid these problems. Locations where forces and sustainment cross international borders are points where processing delays or load reconfigurations may occur. These locations should be designated reporting locations. To establish and maintain ITV, it also will be necessary to collect and report intermodal and intramodal transfers, particularly when shipments of passengers or cargo are further subdivided because of vehicle capacity, route limitations, or other considerations. When automated information technology is used to track containers, the interrogating systems also need to be incorporated into the theater movement control architecture.

The geographic combatant commands need to provide guidance to the components for planning and establishing the movement control architecture. This information should be included in the proposed Joint Theater LOC Planning Guide to guide planners during exercises and contingencies, and to serve as a basis for developing training standards for these units.

USACOM, in coordination with the other geographic combatant commands and their components, should include guidance for planning and establishing the theater movement control architecture in the proposed Joint Theater LOC Planning Guide. This guidance should be used for establishing training standards for the units that operate the theater LOC.

3. Movement Control Architecture Data and Information Content

A key issue for commanders, staff, LOC operators, and system developers is to determine which data elements should be collected and reported so that the essential

information needed by this community of users can be produced. Figure V-3 depicts the common data aspects of ITV and force tracking. Elemental data are needed to track the ULNs, PINs, and CINs that are part of the flows in the theater LOC during RSOI, sustainment, retrograde, and redeployment operations.

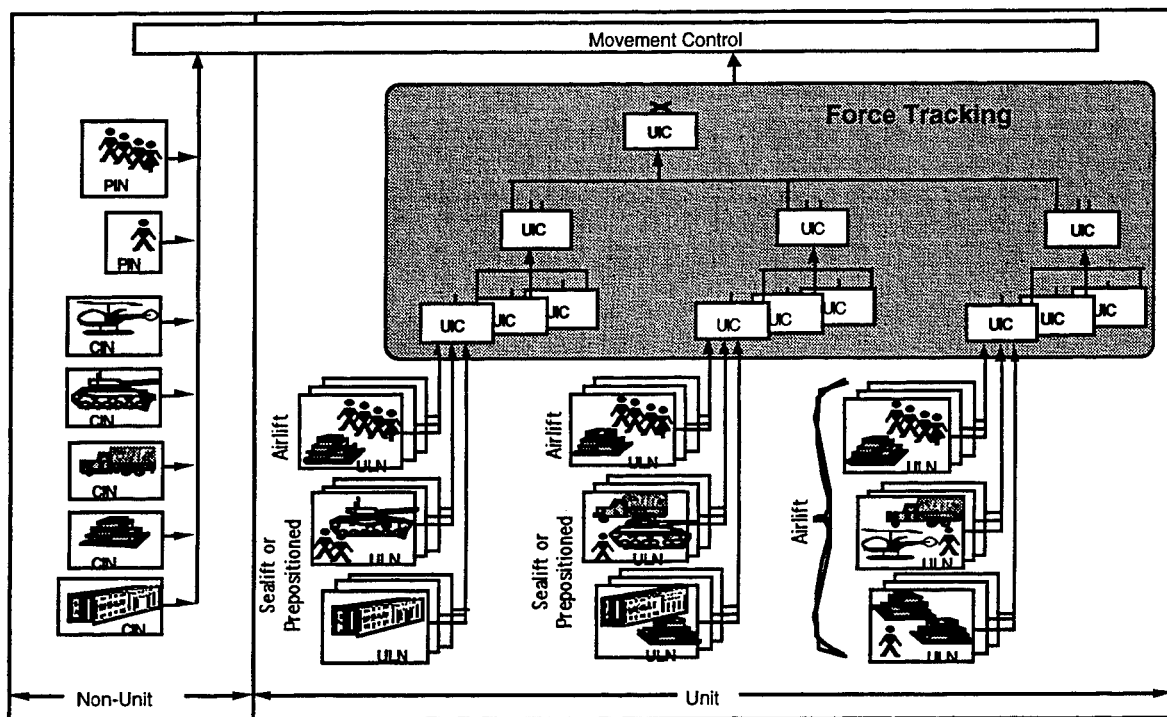


Figure V-3. Relationship Between ITV and Force Tracking

Force tracking is often viewed as merely a mechanical problem of arranging the elemental level data into the appropriate unit hierarchy. Unit commanders report their status and locations to a central point where the reports are integrated and passed on to the combatant commander and his staff. In practice, force tracking is somewhat more complex. Arriving units move through the LOC as separate elements (ULNs) until all parts have been reassembled to form the complete unit (UIC). At this point, the commander of the unit has reestablished control over the entire unit and is able to render accurate reports on the unit's status.

If the unit is part of major combat formation, the commander of the formation will establish control over the force when all units assigned to it have been reassembled. During the RSOI operations, unit commanders and others concerned with force tracking need data that produce the following information:

- Which ULN is reported.
- Where is it located, where is it going, and when it will arrive.

- Where are the remaining parts of the unit and when will they be reassembled into the UIC; and when will all of the UICs be reassembled into the major combat force.
- When will the unit (or major combat formation) be ready to perform its assigned mission.
- When and where will the unit (or formation) be integrated into the combatant command.

Many of these information requirements can be met from the data collected and reported through the movement control architecture. As a part of the development of the GTN, the combatant commands, the Services, and the Defense Logistics Agency were tasked in 1993 to specify the data elements which they required to provide visibility into the movement of passengers, unit equipment, and sustainment cargo through the entire LOC, extending from CONUS into the contingency area. These organizations identified a total 53 data elements shown in Table V-3. Thirty-nine of these elements are currently included in the GTN or available in systems with which it interfaces. A "yes" response in the GTN Prototype column of the table means the data element is included in GTN. A "yes/no" response means the data element is available through another system that directly interfaces with the GTN, but currently is not included in the GTN system itself. A "no" response means that the data element has not yet been incorporated in either GTN or another system.

The 13 data elements that were most requested by the users are passenger name, social security number, rank, Unit Line Number (ULN), Unit Identification Code (UIC), mission number, Transportation Control Number (TCN), port of embarkation, port of debarkation, container number, special handling code, National Stock Number (NSN), and requisition or document number.

Table V-3 . User Identified GTN Data Elements

Nr	Data Element	GTN Prototype	Nr	Data Element	GTN Prototype
1	Passenger Name	Yes	28	Required Delivery Date (RDD)	Yes/No
2	Number of Passengers	Yes	29	Estimated Date/Time of Departure	Yes/No
3	Losing Unit	No	30	Estimated Date/Time of Arrival	Yes/No
4	Gaining Unit	No	31	Actual Date/Time of Departure	Yes/No
5	Port Call	No	32	Actual Date/Time of Arrival	Yes/No
6	Clearance	No	33	Container Number	Yes
7	Blood Type	No	34	Commodity Code	Yes
8	Sex	No	35	Special Handling Code	Yes
9	Social Security Number	Yes	36	Type Cargo Code	Yes
10	Rank	Yes	37	Piece	Yes
11	Unit Line Number (ULN)	Yes	38	Weight	Yes
12	ULN ton/pax	No	39	Nomenclature	Yes
13	Force Closure Date	No	40	National Stock Number (NSN)	Yes
14	Unit Identification Code (UIC)	Yes	41	Condition Code	No
15	Mission Number	Yes	42	Quantity	Yes
16	Transportation Control Number (TCN)	Yes	43	Requisition/Document Number	Yes
17	Government & Commercial Bill of Lading	Yes/No	44	Critical Item Code	No
18	Standard Carrier Alpha Code	No	45	Date Packed	Yes/No
19	Manifest Number	Yes	46	Lot Number	Yes/No
20	Pallet Identification Number	Yes	47	DoD Identification Code	Yes
21	Aircraft Tail Number	Yes	48	Net Explosive Weight (NEW)	Yes/No
22	Vessel Name	Yes	49	Project Code	Yes
23	Mode Code	Yes	50	Round Count	Yes/No
24	Mail Type Code	Yes	51	Serial Number	No
25	Port of Embarkation	Yes	52	Subsistence Type of Pack	No
26	Port of Debarkation	Yes	53	Transportation Account Code	No
27	DoD Activity Address Code	Yes			

The essential elements of data needed to provide visibility into the operations occurring in the theater LOC will include many of these, as well as other, data elements. It will be necessary, for example, to identify the gaining command for units (not merely the “gaining unit” identified as Data Element 4 in Table V-3), and all of the units that are

assigned to major combat formations. Additional data elements needed for force tracking include:

- Date/Time for arrivals of ULNs, not only at the air and water terminals, but also at the other theater nodes.
- Transit routes and expected transit times through Marshaling Areas, Staging Areas, and other intermediate theater destinations the ULN will pass through on its way to its final theater destination.
- Unit condition codes indicating fuel, ammunition, and unit system status.
- Predictive times when unit elements (and units of a formation) will be reassembled and ready for operations.

The planned deployment for first two items listed above could be obtained from a "theater TPFDD" discussed in the previous chapter. The actual reported arrival at these locations would be provided by the movement control architecture data collection and reporting system. The automated processing capabilities available to the JMCA (TC-AIMS II) could compare the actual arrivals with the planned arrivals and, if they were outside of a specified threshold, the JMCA would be alerted that the movement requirement needed controller attention.

The other two items listed relate to the force tracking requirements. These items require input from the unit (and force) commander. These data need to be entered into the movement control architecture so that the unit readiness and predictive times for transfer of authority are available to the combatant command and the components.

The Army's National Training Center (NTC) at Fort Irwin has recently integrated a scenario-based theater entry operation into the administrative preparation week of its 28-day training cycle. This operation replicates the Army War Reserve Prepositioned Stocks draw procedures for heavy brigades, and establishes the interface between the deploying unit and an Army theater logistics base. Even though this scenario entails the reassembly of troops with equipment that is prepositioned in theater, the process allows unit commanders to address many of the issues of rebuilding unit readiness that they will encounter during any joint RSOI operation. In particular, commanders and staffs at all echelons are faced with the problem of integrating unit personnel, equipment, and accompanying supplies into combat power.

To assist these commanders and their staffs in this integration process, the NTC has produced a series of hierarchical charts which commanders can use at their discretion. These charts are intended to collect and organize data, to integrate the data, and display

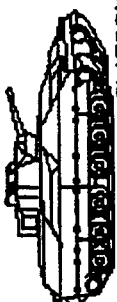
information to assist commanders at all echelons with monitoring and controlling the reassembly of these unit pieces (ULNs into UICs, and UICs into a major combat formation at the brigade echelon) into a coherent, disciplined force capable of performing its assigned missions in a combat environment.

Although the entire series of NTC charts is far too numerous to include here, the most important ones are shown for illustration. These charts start with an assessment of the capability of each combat vehicle in each platoon displayed in Figure V-4. At any given reporting time, the capability of each vehicle and associated crew in the unit is assessed for its current capability in the following areas:

- Shooting
- Moving
- Communicating
- Sustaining themselves
- Protecting the force
- Training
- Personnel status
- Command and control.

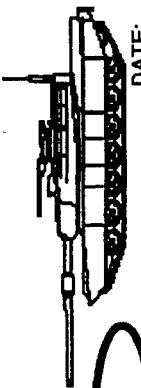
Each platoon's assessment is then integrated into an assessment of its assigned company or team. Each company or team's assessment is integrated into an assessment of each task force or battalion. These summary displays are provided in Figure V-5.

Finally, each task force or battalion assessment is integrated into an overall assessment of the combat readiness of the deploying brigade. Figure V-6 shows another status chart that the brigade commander can use to see at a glance the progress of his units reassembling their various deploying elements into a combat-ready task force. Another data element that needs to be added is the commander's assessment of when he estimates the unit (or force) to be ready to transfer authority at the final destination. Although this assessment process is optimized for the assessment of combat power for an Army heavy brigade, the concept could be modified and extended to cover combat, combat support, and combat service support unit capabilities of other Service components.



PLATOON

PLATOON COMBAT CAPABILITY



DATE: _____

PLATOON _____

CO _____

TF _____

COMBAT CAPABILITY	VEHICLE 1	VEHICLE 2	VEHICLE 3	VEHICLE 4
SHOOT	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK
MOVE	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK
COMMUNICATE	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK
SUSTAIN	GREEN--AMBER--BLACK	GREEN--AMBER--BLACK	GREEN--AMBER--BLACK	GREEN--AMBER--BLACK
FORCE PROTECTION	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK	GREEN---BLACK
TRAINING	GREEN--AMBER--BLACK	GREEN--AMBER--BLACK	GREEN--AMBER--BLACK	GREEN--AMBER--BLACK
PERSONNEL STATUS	GREEN--RED--BLACK	GREEN--RED--BLACK	GREEN--RED--BLACK	GREEN--RED--BLACK
C2	GREEN--RED--BLACK	GREEN--RED--BLACK	GREEN--RED--BLACK	GREEN--RED--BLACK
VEHICLE STATUS				

PLATOON RATING: GREEN: ALL VEHICLES GREEN AMBER: THREE OF FOUR VEHICLES AMBER OR BETTER

RED: TWO OF FOUR VEHICLES RED OR BETTER BLACK: THREE OF FOUR VEHICLES BLACK

ALL VEHICLES NOT BLACK ARE REPORTED HIGHER AS COMBAT CAPABLE ON SLANT REPORT

Figure V-4. Platoon Combat Capability

BUILDING COMBAT CAPABILITY						
	CO/TM	CO/TM	CO/TM	CO/TM	HHC	TF
	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SHOOT	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
MOVE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
COMMUNICATE	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
SUSTAIN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
TRAIN	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
FORCE PROTECTION	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Legend:

-BASED ON VEHICLE AND PLT AND CO/TM CHECK LISTS, THE FOLLOWING COLOR CODES APPLY FOR DETERMINING THE BUILDING OF COMBAT CAPABILITY:

- GREEN: 90% OR MORE CAPABILITY AVAILABLE
- AMBER 70%-89% CAPABILITY AVAILABLE
- RED 50%-69% CAPABILITY AVAILABLE
- BLACK: 49% OR LESS CAPABILITY AVAILABLE

*OVERALL UNIT COLOR CODE EQUALS LOWEST COLOR OF SUBORDINATE RATINGS

Figure V-5. Task Force Status

The geographic combatant commands and their Service components should review the illustrated procedures to determine their utility for assessing the status of deploying elements of the force as they reassemble in the contingency area. They should also develop similar procedures for combat, combat support, and combat service support unit capabilities for each component. These status displays should be standardized and employed by the geographic combatant commands for assessing the readiness of deploying units. Once defined, these displays should be integrated into the TC-AIMS II so that the information can be provided to commanders and staffs at appropriate echelons.

USACOM, in coordination with the other geographic combatant commands and their components, should develop readiness display formats for combat, combat support, and combat service support units that will deploy during contingency operations, and provide these display formats to the TC-AIMS II developer so they can be incorporated into the system design.

BRIGADE GLIDE PATH

UNIT SYMBOLS FILLED IN UPON TASK ORGANIZATION

DATA FOR REPORT AS OF _____ (DTG)

• GREEN: 90% OR MORE CBT SYSTEMS AVAILABLE
• AMBER: 70%-89% CBT SYSTEMS AVAILABLE
• RED: 50%-69% CBT SYSTEMS AVAILABLE
• BLACK: 49% OR LESS CBT SYSTEMS AVAILABLE

• CAN SUBJECTIVELY DOWNGRADE/UPGRADE BASED ON STATUS OF INF SQUADS, MORTARS, SCOUTS, FISTV, BSRV, etc.
EXPLAIN IN COMMENTS

EXAMPLE

UNIT ID

30 NOV

SIZE

PLANNED COMBAT

CAPABLE DATE

COMMENTS

Figure V-6. Brigade Task Force Readiness Status

4. Automated System Support

Although DAMMS-R and STACCS currently exist, these systems do not have the capability to collect and process the type of information needed by the commanders, staffs, and theater LOC operators to execute joint RSOI, sustainment, and retrograde operations within the contingency area. The development of TC-AIMS II is intended to fix many of the problems inherent in these systems, but it currently will focus on the transportation-related data elements, not the data concerned with joint RSOI processing at these nodes as they reassemble combat capabilities. Requirements definition for the system is just now beginning. This timing provides an invaluable opportunity for the combatant commands and their components to ensure their requirements are included in the system design, including not only the ITV capabilities, but also the capabilities needed to accomplish force tracking.

The Program Manager for TC-AIMS II should require active participation by the geographic combatant commands and their components during requirements definition and system development to ensure the system will provide the required data collection, reporting, processing capabilities, and the information displays needed by them during contingency deployments.

APPENDIX A

ABBREVIATIONS AND ACRONYMS

APPENDIX A

ABBREVIATIONS AND ACRONYMS

AAA	Arrival and Assembly Area (USMC)
AACG	Arrival Airfield Control Group
AAIS	Air-to-Air Interface Site
ABCA	American, British, Canadian, Australian Armies Standardization Program
ABFC	Advanced Base Functional Components (USN)
ACCIS	Allied Command Europe (ACE) Automated Command and Control Information System (NATO)
ACE	Allied Command Europe (NATO)
A/DACG	Arrival/Departure Airfield Control Group
ADAMS III	Aerial Port Documentation and Management System (AMC)
ADAMS	ACE Deployment and Movement System (NATO)
ADP	Automated Data Processing
AECC	Aeromedical Evacuation Control Center
AEHA	Aeromedical Evacuation Holding Area
AELT	Aeromedical Evacuation Liaison Team
AESS	Aircraft Enroute Support Site
AFDD	Air Force Doctrine Document
AFFOR	Air Force Forces
AFI	Air Force Instruction
AFM	Air Force Manual
AFR	Air Force Regulation
ALCC	Airlift Control Center
ALOC	Air Lines of Communication
ALP	Allied Logistics Publication
ALSS	Advanced Logistic Support Site (USN)
AMC	Air Mobility Command (USAF); Army Materiel Command (USA)
AMCC	ACE Mobility Coordination Center (NATO)
AME	Air Mobility Element
AMP	Analysis of Mobility Platform (USTRANSCOM)
AMTS	Alliance Movement and Transportation System (NATO)
AOC	Air Operations Center (USAF)
AOR	Area of Responsibility
APF	Afloat Prepositioning Force (USA)
APOD	Aerial Port of Debarkation
AR	Army Regulation
ARFOR	Army Forces
ARRC	ACE Rapid Reaction Corps (NATO)
ASCC	Air Standardization Coordinating Committee (NATO)
ASG	Area Support Group (USA)

ATMCT	Air Terminal Movement Control Team (USA)
ATP	Allied Tactical Publication
ATPHA	Air Terminal Passenger Holding Area
AWR	Army War Reserve (USA)
BBP	Breakbulk Point
BRACE	Base Resource and Capability Estimator (AMC)
BSB	Base Support Battalion
BSP	Base Support Plan (USAF)
CAA	Command Arrangement Agreements; Convoy Assembly Area
CaHA	Cargo Holding/Handling Area
CAPS II	Consolidated Aerial Port Subsystem II (AMC)
CASCOM	U.S. Army Combined Arms Support Command
CCEB	Combined Communications-Electronics Board
CFM	CONUS Freight Management (MTMC)
CHE	Container Handling Equipment
CHOP	Change of Operational Control (DoD)
CIN	Cargo Increment Number (JOPES)
CINC	Commander-in-Chief
C/JMCC	Combined/Joint Movement Control Center
C/JTF	Combined/Joint Task Force
CLF	Combat Logistics Force (USN)
CLPSB	CINC Logistic Procurement Support Board
CMC	Commandant of the Marine Corps
CMOS	Cargo Movement Operations System (USAF)
CMX	Crisis Management Exercise (NATO)
COA	Course of Action
COB	Collocated Operating Base
COCOM	Combatant Command (Command Authority)
COD	Carrier Onboard Delivery (USN)
CoHA	Container Handling Area/Container Holding Area
COL	Contingency Operating Location
COMPASS	Computerized Online Movement Planning and Status System (USA)
CONUS	Continental United States
CORE	Contingency Response Program (MTMC)
COTS	Commercial-off-the-Shelf
CRAF	Civil Reserve Air Fleet
CSC	Convoy Support Center
CS/CSS	Combat Support/Combat Service Support
CSG	Corps Support Group (USA)
C-Spt	Commander for Support (NATO)
CSSCS	Combat Service Support Computer System (USA)
DAAS	Defense Automatic Addressing System
DAMMS-R	Department of the Army Movements Management System Redesign (USA)
DART	Dynamic Analysis and Replanning Tool (AMP)
DBOF-T	Defense Business Operations Fund-Transportation

DDN	Defense Data Network
DHA	Driver Holding Area
DHASG	Driver Holding Area Support Group
DIA	Defense Intelligence Agency
DIRMOBFOR	Director of Mobility Forces (AMC)
DLAR	Defense Logistics Agency Regulation
DoD	Department of Defense
DSN	Defense Switched Network (DoD)
DSS	Distribution Standard System (DLA); Direct Supply Support (USA)
DTS	Defense Transportation System (DoD)
DTTS	Defense Transportation Tracking System (DoD)
EARLO	Enhanced Airlift Reporting for Logistics and Operations
ELIST	Enhanced Logistics Intratheater Support Tool (AMP)
EPW	Enemy Prisoner of War
EPWHA	Enemy Prisoner of War Holding Area
EVAC	Evacuation File Maintenance and Retrieval System
FAPES	Force Augmentation Planning and Execution System
FCHA	Frustrated Cargo Holding Area
FD	Final Destination (JOPES)
FDRP	First Destination Reporting Point
FIE	Fly-in Echelon (USMC)
FLS	Forward Logistics Site (USN)
FM	Field Manual (USA)
FMCC	Force Movement Control Center (USMC)
FMFM	Fleet Marine Force Manual (USMC)
FMFRP	Fleet Marine Force Reference Publication (USMC)
FORCEFLO	Force Flow (AMP)
FORCEGEN	Force Generation (AMP)
FORSCOM	Forces Command (USA)
FRAS	Fuel Resources Analysis System
FSS	Fast Sealift Ship
FSSG	Force Service Support Group (USMC)
GBL	Government Bill of Lading
GCCS	Global Command and Control System (JCS)
GDM	Generalized Development Model (NATO)
GDSS	Global Decision Support System (AMC)
GEOLOC	Geographic Location Code (JOPES)
GOTS	Government-off-the-Shelf
GPRC	Global Patient Regulating Center
GRIS	Global Reconnaissance Information System
GRLP	Global Reach Laydown Package (AMC)
GSORTS	Global Status of Resources and Training Systems
GTN	Global Transportation Network (USTRANSCOM)
HAA	Helicopter Assembly Area
HFT	Headquarters Force Tracking
HHC	Headquarters, Headquarters Company

HMA	Helicopter Marshaling Area
HMASG	Helicopter Marshaling Area Support Group
HNS	Host Nation Support
HNSA	Host Nation Support Agreement
IBS	Integrated Booking System (MTMC)
ICODES	Integrated Computerized Deployment System
IDA	Institute for Defense Analyses
IFOR	Implementation Force
INMARSAT	International Maritime Satellite
IO	International Organization
ISB	Intermediate Staging Base
ITO	Installation Transportation Office (USA)
ITV	Intransit Visibility
J-4	Logistics Directorate of a Joint Staff
JAP	Joint Aerial Port
JAPC	Joint Aerial Port Complex
JBPO	Joint Blood Program Office (DoD)
JCMEB	Joint Civil-Military Engineering Board
JCS	Joint Chiefs of Staff (DoD)
JDISS	Joint Deployable Intelligence Support System
JDS	Joint Deployment System
JEPES	Joint Engineer Planning and Execution System
JFACC	Joint Force Air Component Commander
JFAST	Joint Flow and Analysis System for Transportation (AMP)
JFUB	Joint Facilities Utilization Board
JICTRANS	Joint Intelligence Center, U.S. Transportation Command
JMAO	Joint Mortuary Affairs Office
JMASS	Joint Mission Applications Support System
JMC	Joint Movement Center
JMCA	Joint Movement Control Agency
JMCIS	Joint Maritime Command Information System
JMPAB	Joint Materiel Priorities and Allocation Board
JOPEB	Joint Operation Planning and Execution System
JPEC	Joint Planning and Execution Community
JPO	Joint Petroleum Office
JRAC	Joint Rear Area Coordinator
JSCP	Joint Strategic Capabilities Plan
JTB	Joint Transportation Board
JTSC	Joint Theater Support Command
JTTP	Joint Tactics, Techniques and Procedures
JWP	Joint Water Port
JWPC	Joint Water Port Complex
KBLPS	Knowledge Based Logistics Planning Shell (USA)
LAD	Logistics Anchor Desk (USA)
LIF	Logistics Information File

LMSR	Large Medium Speed Roll-on/Roll-off Vessel
LOC	Lines of Communication
LOGCAP	Logistics Civilian Augmentation Program (USA)
LOGSAFE	Logistic Sustainment Analysis and Feasibility Estimator
LRC	Logistics Readiness Center
LSB	Landing Support Battalion (USMC)
LSMP	Logistic Support and Mobilization Plans (USN)
MA	Marshaling Area
MADCAP	Mobilization and Deployment Capability Assurance Project (USA)
MAGTAF II	Marine Air-Ground Task Force War Planning System II (USMC)
MAGTF	Marine Air-Ground Task Force
MARAD	Maritime Administration (DOT)
MARFOR	Marine Corps Forces
MASG	Marshaling Area Support Group
MASS	Mobility Analysis Support System (AMP)
MC	Military Committee (NATO)
MCA	Mobility Concepts Agency
MCO	Marine Corps Order
MCRR	Movement Control and Readiness Reporting
MCT	Movement Control Team (USA)
MDSS II	Marine Air Ground Task Force Deployment Support System II (USMC)
MEDSUP	Medical Supply (System) (USA)
MEF	Marine Expeditionary Force
MEPES	Medical Planning and Execution System
METL	Mission Essential Task List
METS II	Military Export Traffic System II (MTMC)
METT-T	Mission, Enemy, Terrain and Weather, Troops and Support Available, Time Available
MHE	Material Handling Equipment
MIDAS	Model for Intertheater Deployment by Air and Sea (AMP)
MILSTAMP	Military Standard Transportation and Movement Procedures (DoD)
MOA	Memorandum of Agreement
MOB	Main Operating Base
MOG	Maximum (aircraft) on the Ground
MPC	Medium Port Command (MTMC)
MPF	Maritime Prepositioning Force
MPS	Maritime Prepositioning Ships
MPSRON	MPS Squadron
MRC	Major Regional Contingency
MSC	Military Sealift Command (USN); Major Subordinate Command (USA)(NATO)
MSCO	Military Sealift Command Office
MSE	Mobile Subscriber Equipment (USA)
MSR	Main Supply Route
MTMC	Military Traffic Management Command (USA)

NATO	North Atlantic Treaty Organization
NAVCHAPGRU	Navy Cargo Handling and Port Group
NAVFOR	Navy Forces
NCA	National Command Authorities
NCWA	NATO Civil Wartime Agencies
NDP	Naval Doctrine Publication
NDRF	National Defense Reserve Fleet
NEO	Noncombatant Evacuation Operation
NEW	Net Explosive Weight
NGO	Nongovernmental Organization
NHA	Noncombatant Holding Area
NIMA	National Imagery and Mapping Agency
NIPRNET	Non-Secure IP Routed Network (DoD)
NRC	Non-Unit-Related Cargo
NRG	Notional Requirements Generator
NRP	Non-Unit-Related Personnel
NRPA	Non-Unit Related Personnel Activity
NSN	National Stock Number; NATO Stock Number
NTC	National Training Center
NWP	Naval Warfare Publication
OCONUS	Outside the Continental United States
OOTW	Operations Other Than War
OPCON	Operational Control
OPLAN	Operation Plan
OPNAVINST	Chief of Naval Operations Instruction
OPORD	Operation Order
OSD	Office of the Secretary of Defense
PACS	Passenger Automated Check-in System (AMC)
PES	Prepositioned Equipment Site
PIN	Personnel Increment Number (JOPES)
POD	Port of Debarkation; Port of Departure
POE	Port of Embarkation; Port of Entry
POL	Petroleum, Oils, and Lubricants
POPS	Port Operational Performance Simulator (MTMC)
PORTSIM	Port Simulation (MTMC)
PRAMS	Passenger Reservation and Manifesting System (AMC)
PSA	Port Support Activity
PSP	Prestock Supply Point
PTP	POL Transfer Point
PVO	Private Volunteer Organization
PWIS-2	Prisoner of War Information System-2
QM	Quartermaster
QSOP	Quadripartite Standing Operating Procedure
QWG	Quadripartite Working Group
QSTAG	Quadripartite Standing Agreement
RC	Reserve Component

RDD	Required Delivery Date (JOPES)
RED HORSE	Rapid Engineer Deployable, Heavy Operational Repair Squadron, Engineer (USAF)
RFAS	Reaction Forces Air Staff (NATO)
RH	Railhead
RO/RO	Roll-on/Roll-off
RSOI	Reception, Staging, Onward Movement, and Integration
SA	Staging Area
SAAM	Special Assignment Airlift Mission
SAAS-Mod	Standard Army Ammunition System-Modified (USA)
SACEUR	Supreme Allied Commander, Europe (NATO)
SAIO	Sea to Air Interface Organization
SAIS	Sea-Air Interface Site
SARSS	Standard Army Retail Supply System (USA)
SASG	Staging Area Support Group
SEDRE	Sealift Emergency Deployment Readiness Exercise
SHAPE	Supreme Headquarters Allied Powers Europe
SIPRNET	Secure IP Routed Network (DoD)
SLOC	Sea Line of Communication
SLRP	Survey, Liaison, and Reconnaissance Party
SPOD	Seaport of Debarkation
SRO	Sensitive Reconnaissance Operations
SSA	Supply Support Activity
STACCS	Standard Theater Army Command and Control System (USA)
STAMIS	Standard Army Management Information System (USA)
STANAG	Standardization Agreement (NATO)
STON	Short Tons
STRADS	Strategic Deployment System (MTMC)
SUMMITS	Scenario Unrestricted Mobility Model for Intratheater Simulation
TAA	Tactical Assembly Area
TAACOM	Theater Army Area Command (USA)
TACC	Tanker Airlift Control Center
TACON	Tactical Control
TALCE	Tanker Airlift Control Element
TAMCA	Theater Army Movement Control Agency (USA)
TARGET	Theater Analysis and Replanning Graphical Execution Toolkit
TAV	Total Asset Visibility (DoD)
TC-ACCIS	Transportation Coordinator's Automated Command and Control Information System (USA)
TC-AIMS II	Transportation Coordinator's Automated Information for Movement System (DoD)
TCN	Transportation Control Number
TEA	Transportation Engineering Agency (MTMC)
TMCA	Theater Movement Control Agency
TMO	Traffic Management Office (USAF)

TOA	Transfer of Authority
TPFDD	Time-Phased Force and Deployment Data
TPMRC	Theater Patient Movements Requirements Center
TRAC ² ES	TRANSCOM Regulating and Command and Control Evacuation System
TSC	Theater Support Command (USA)
TSM	Terminal Support Module (MTMC)
TSP	Transshipment Point
TTCP	The Technical Cooperation Program
TTP	Trailer Transfer Point
TUCHA	Type Unit Characteristics File (JOPES)
UCP	Unified Command Plan
UIC	Unit Identification Code
ULLS	Unit Level Logistics System (USA)
ULN	Unit Line Number
UN	United Nations
UNAAF	Unified Action Armed Forces
UNSCR	United Nations Security Council Resolution
URG	Underway Replenishment Group
USACOM	United States Atlantic Command
USAREUR	U.S. Army Forces, U.S. European Command
USC	United States Code
USCINCTRANS	Commander-in-Chief, U.S. Transportation Command
USEUCOM	United States European Command
USTRANSCOM	United States Transportation Command
UTACCS	USAREUR Tactical Army Command and Control System
VAA	Vehicle Assembly Area
VISA	Voluntary Intermodal Sealift Agreement
VOD	Vertical Onboard Delivery (USN)
VTA	Voluntary Tanker Agreement
WPS	Worldwide Port System (MTMC)
WWMCCS	Worldwide Military Command and Control System

APPENDIX B

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APPENDIX B

BIBLIOGRAPHY

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APPENDIX C

GLOSSARY

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Accompanying Supplies

Materiel accompanying and considered part of a deploying military unit. Accompanying supplies are documented with a MILSTAMP unit movement transportation control number. (Source: Defense ITV Integration Plan)

Administrative Control

Direction or exercise of authority over subordinate or other organizations in respect to administration and support, including organization of Service forces, control of resources and equipment, personnel management, unit logistics, individual and unit training, readiness, mobilization, demobilization, discipline, and other matters not included in the operational missions of the subordinate or other organizations. Also called ADCON. (Source: Joint Pub 1-02)

Administrative Loading

A loading system which gives primary consideration to achieving maximum utilization of troop and cargo space without regard to tactical considerations. Equipment and supplies must be unloaded and sorted before they can be used. (Source: Joint Pub 1-02)

Administrative Movement

A movement in which troops and vehicles are arranged to expedite their movement and conserve time and energy when no enemy interference, except by air, is anticipated. Also called administrative march. (Source: Joint Pub 1-02)

Administrative Shipping

Support shipping that is capable of transporting troops and cargo from origin to destination, but which cannot be loaded or unloaded without non-organic personnel and/or equipment; e.g., stevedores, piers, barges, boats. (Source: Joint Pub 1-02)

Advanced Logistics Support Site (ALSS) (USN)

An overseas location used as the primary transshipment point in the theater of operations for logistics support. A naval advanced logistic support site possesses full capabilities for storage, consolidation, and transfer of supplies and for support of forward-deployed units (including replacements units) during major contingency and wartime periods. Naval advanced logistic support sites, with port and airfield facilities in close proximity, are located within the theater of operations but not near the main battle areas, and must possess the throughput capacity required to accommodate incoming and outgoing intertheater airlift and sealift. When fully activated, the naval advanced logistic support site should consist of facilities and services provided by the host nation, augmented by support personnel located in the theater of operations, or both. Also, called ALSS. See also naval forward logistic site. (Source: Joint Pub 1-02)

Aerial Port

An airfield that has been designated for the sustained air movement of personnel and materiel, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Joint Pub 1-02)

Aerial Port Control Center

The agency responsible for the management and control of all aerial port resources and for the receipt and dissemination of all airlift requirements received from the airlift coordination cell as the joint force commander's agent. Also called APCC. (Source: Joint Pub 3-17)

Aeromedical Evacuation Holding Area (AEHA)

A facility on or in the vicinity of air bases or air terminals designated by the combatant command, in coordination with the Global Patient Regulating Center (GPRC), for temporarily holding patients and medical crews awaiting aeromedical evacuation from the area of operations. Life support and medical support will be provided to patients and crews in the holding area by the supported combatant command. (Source: Stipulated)

Afloat Pre-Positioning Force

Shipping maintained in a full operational status to afloat pre-position military material in support of unified commanders operations plans. The APF is the functional successor to the Near Term Pre-Positioning Force, which was disestablished with the deployment of Maritime Pre-Positioning Squadron TWO. The APF consists of the MPS and the pre-positioning (depot) ships, and is deployed worldwide. (Source: Joint Pub 4-01.6)

Aircraft Enroute Support Site (AESS)

Sites designated by the supported combatant command, in coordination with the host nation, U.S. Transportation Command, Service components, and allied organizations, that provide security, life support to transient air crews, services for aircraft and helicopters, and limited specialized maintenance for aircraft and helicopters. (Source: Stipulated)

Airfield

An area prepared for the accommodation (including any buildings, installations, and equipment), landing and take-off of aircraft. (Source: Joint Pub 1-02)

Air Freight Terminal

A facility that provides administrative functions and space for in-transit storage; the receipt and processing of originating, terminating, and in-transit air cargo; and the marshaling, manifesting, and forwarding of air cargo to destinations of either domestic or overseas bases. (Source: AFM 11-1)

Airhead

1. A designated area in a hostile or threatened territory which, when seized and held, ensures the continuous air landing of troops and materiel and provides the maneuver space necessary for projected operations. Normally it is an area seized in the assault phase of an airborne operation. 2. A designated location in an area of operations used as a base for supply and evacuation by air. (Source: Joint Pub 1-02)

Airlift Control Center

An operations center where the detailed planning, coordinating, and tasking for tactical airlift operations are accomplished. This is the focal point for communications and the source of control and direction for the tactical airlift forces. Also called ALCC. (Source: Joint Pub 1-02)

Airlift Coordination Cell

A cell within the air operations center which plans, coordinates, manages, and executes theater airlift operations in the area of responsibility or joint operations area. Normally consists of an airlift plans branch, an airlift operations branch, and an airlift logistics branch. Also called ALCC. (Source: Joint Pub 3-17)

Air Lines of Communication (ALOC)

Air routes, designated by U.S. Transportation Command in coordination with the providing and supported combatant commands and the host nations through which the routes pass, that connect an operating military force with a base of operations. (Source: adapted from Joint Pub 1-02)

Air Mobility Element

The air mobility element is an extension of the Air Mobility Command Tanker Airlift Control Center deployed to a theater when requested by the geographic combatant commander. It coordinates strategic airlift operations with the theater airlift management system and collocates with the air operations center whenever possible. Also called AME. (Source: Joint Pub 3-17)

Air Route

The navigable airspace between two points, identified to the extent necessary for the application of flight rules. (Source: Joint Pub 1-02)

Air Terminal

A facility on an airfield that functions as an air transportation hub and accommodates the loading and unloading of airlift aircraft and the intransit processing of traffic. The airfield may or may not be designated as an aerial port. (Source: Joint Pub 1-02)

Air-to-Air Interface Site (AAIS)

The location at an air terminal where personnel and/or materiel arriving by either strategic or theater airlift are transferred to the other airlift mode for onward movement to an intermediate or final destination. The site will be designated by the supported combatant command, in coordination with the host nation, U.S. Transportation Command and Service components. (Source: Stipulated)

Air Terminal Personnel Holding Area (ATPHA)

A site in the vicinity of an air terminal designated by the commander of a Joint Aerial Port Complex, in coordination with the host nation, where life support is provided to arriving military personnel of deploying units or non-unit related military personnel and civilian personnel while awaiting onward movement to final destination. (Source: Stipulated)

Air-to-Air Interface Airfield

Any Aerial Port of Debarkation at which a portion of the personnel and materiel arriving by strategic airlift is moved forward by theater airlift to intermediate or final destinations. (Source: Stipulated)

Allocation

In a general sense, distribution of limited resources among competing requirements for employment. Specific allocations, (e.g. air sorties, nuclear weapons, forces, and transportation) are described as allocation of air sorties, nuclear weapons, etc. Source: Joint Pub 1-02)

Apportion

To make resources available to the commander of a unified or specified command for deliberate planning. Apportioned resources are used in the development of operation plans and may be more or less than those allocated for execution planning or actual execution (Source: Joint Pub 5-02.1)

Area Command

A command which is composed of those organized elements of one or more of the armed services, designated to operate in a geographical area, which are placed under a single commander. (Source: Joint Pub 1-02)

Area of Responsibility

A defined area of land in which responsibility is specifically assigned to the commander of the area for the development and maintenance of installations, control of movement, and the conduct of tactical operations involving troops under the commander's control, along with parallel authority to exercise these functions. (Source: Joint Pub 1-02)

Arrival Airfield Control Group

The organization that receives transported units from the Air Force carrier and controls them until released to their parent unit. (Source: FM 55-12)

Arrival and Assembly Area (AAA)

An area designated by CMPF in coordination with the unified commander and host nation for arrival, offload, and assembly of forces and MPE/S, and preparations for subsequent operations. The AAA is administrative in nature and does not denote command of a geographic area. Such an area may be inside an AOA. Within the AAA, coordination authority for the following is implied for CMPF:

1. Prioritization and use of airfield(s), port, beach facilities, and road networks.
2. Air traffic control
3. Logistics support activities

(Source: NWP 22-10)

Automated Identification Technology (AIT)

Consists of process control hardware, application software, and hybrids that provide industry-standard real-time data acquisition to enhance productivity. It includes bar codes, radio frequency identification, magnetic stripes, smart cards, and optical laser cards. In DoD logistics, these technologies facilitate the capture of supply, maintenance, and transportation information for inventory and movement management, shipment diversion and reconstruction, and personnel or patient identification. (Source: Defense ITV Integration Plan)

Backhaul

Shipment of material in the direction opposite to the major flow of shipments on otherwise empty returning transport assets. (Source: FM 55-40)

Bare Base System

U.S. Air Force systems consisting of Harvest Eagle, Harvest Falcon, and fuels mobility support equipment. Bare base systems are designed to provide minimum essential troop cantonment facilities (billeting, showers, latrines, and food service) and operational support (offices, shops, limited shop equipment, Petroleum, Oils and Lubricants (POL), and runway matting). Units using this equipment are expected to deploy with mobility equipment and spares peculiar to their operation in sufficient quantities to allow self-support until resupply is established. Support is available for war or contingency tasking, and can be requested on an individual basis to satisfy mission requirements. (Source: AFI 25-101)

Base

1. A locality from which operations are projected or supported. 2. An area or locality containing installations which provide logistic or other support. 3. Home airfield or home carrier. (Source: Joint Pub 1-02)

Base Cluster

In base defense operations, a collection of bases, geographically grouped for mutual protection and ease of command and control. (Source: Joint Pub 1-02)

Base Cluster Commander

In base defense operations, the senior officer in the base cluster (excluding medical officers, chaplains, and commanders of transient units), with responsibility for coordinating the defense of bases within the base cluster and for integrating defense plans of bases into a base cluster defense plan. (Source: Joint Pub 1-02)

Battlefield Distribution (BD)

The process that enables U.S. Forces to properly request, receive, redirect, maintain, distribute, control, and retrograde within a single distribution system. This will maximize throughput and ensure continuous and timely visibility of units, personnel, and unit/sustainment materiel moving within the area of operations. The reception, onward movement, and redeployment to, from, and within an area of operations is accomplished through the BD. (Source: USA CASCOT Draft Concept)

Beachhead

A designated area in a hostile or potentially hostile shore that, when seized and held, ensures the continuous landing of troops and materiel, and provides maneuver space requisite for subsequent projected operations ashore. (Source: Joint Pub 1-02)

Beach Support Area

In amphibious operations, the area to the rear of a landing force or elements thereof, established and operated by shore party units, which contains the facilities for the unloading of troops and materiel and the support of the forces ashore; it includes facilities for the evacuation of wounded, enemy prisoners of war, and captured materiel. (Source: Joint Pub 1-02)

Breakbulk Point (BBP)

A transshipping activity to which unitized shipments for various consignees are consigned and from which the shipments are distributed as separate shipment units to the ultimate consignee. (Source: DoD 4500.32-R)

A location where unitized shipments for various consignees are consigned for processing into separate shipments for onward movement to the ultimate consignee. The commander designating the breakbulk point location will coordinate the use of the facilities with the host nation. (Source: Adapted from DoD 4500.32-R)

Bulk Cargo

That which is generally shipped in volume where the transporting conveyance is the only external container, such as liquids, ore or grain. (Source: Joint Pub 1-02)

C-Day

The unnamed day on which a deployment operation commences or is to commence. The deployment may be a movement of troops, cargo, weapon systems, or a combination of these elements using any or all types of transport. The letter "C" will be the only one used to denote the above. (Source: Joint Pub 1-02)

Camp

A group of tents, huts, or other shelter set up temporarily for troops, and more permanent than a bivouac. A military post, temporary or permanent, may be called a camp. (Source: Joint Pub 1-02)

Cargo Handling Detachment (CHD)

An NSE component consisting of those U.S. Navy cargo handling force personnel initially assigned to the OPP who are augmented by additional supervisory and technical NSE personnel to accomplish the offload. (Source: NWP 1-02)

Cargo Holding/Handling Area (CaHA)

A designated location for temporarily holding (1) arriving cargo until onward movement to the consignee can be arranged, (2) departing cargo until strategic transportation can be arranged, (3) where cargo pallets are built or broken down. Cargo holding/handling areas are designated by the commander of the facility, in coordination with the host nation and the Joint Movement Center. (Source: Stipulated)

Cargo Increment Number (CIN)

The numbering scheme of seven characters (2A, 5N) which uniquely defines each on unit cargo record. The first two characters identify Service and cargo type, respectively. The last five characters are the increment assignment. (See PIN) (Source: TD 18-14-2)

Channel Airlift

Common-user airlift service provided on a scheduled basis between two points. (Source: Joint Pub 1-02) There are two types of channel missions. A Requirements Channel is an Air Mobility Command channel that serves two or more points on a scheduled basis depending on the volume of traffic. A Frequency Channel is Air Mobility Command airlift service provided at U.S. Transportation Command approved frequency, based on user needs. (Source: Joint Pub 4-01)

Civil Reserve Air Fleet

A program in which the Department of Defense uses aircraft owned by a U.S. entity or citizen. The aircraft are allocated by the Department of Transportation to augment the military airlift capability of the Department of Defense (DoD). These aircraft are allocated, in accordance with DoD requirements, to segments, according to their capabilities, such as Long-Range International (cargo and passenger), Short-Range International, Domestic, Alaskan, Aeromedical, and other segments as may be mutually agreed upon by the Department of Defense and the Department of Transportation. The Civil Reserve Air Fleet (CRAF) can be incrementally activated by the Department of Defense in three stages in response to defense-oriented situations, up to and including a declared national emergency or war, to satisfy DoD airlift requirements. When activated, CRAF aircraft are under the mission control of the Department of Defense while remaining a civil resource under the operational control of the responsible U.S. entity or citizen. (Source: Joint Pub 1-02)

Collocated Operating Base (COB)

An active or reserve allied airfield designated for joint, combined, or unilateral use by U.S. contingency or wartime augmentation forces or for wartime relocation of U.S. theater forces. Collocated Operating Bases are not U.S. bases. A Service air terminal will usually be established at the base. (Source: Adapted from AFM 11-1)

Combatant Command (Command Authority) (COCOM)

Nontransferable command authority established by title 10, United States Code, section 164, exercised only by commanders of unified or specified commands unless otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations; normally this authority is exercised through the Service or functional component commander. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions. Also called COCOM. (Source: Joint Pub 1-02)

Combat Forces

Those forces whose primary missions are to participate in combat. (Source: Joint Pub 1-02)

Combat Loading

The arrangement of personnel and the stowage of equipment and supplies in a manner designed to conform to the anticipated tactical operation of the organization embarked. Each individual item is stowed so that it can be unloaded at the required time. (Source: Joint Pub 1-02)

Combat Service Support

The essential capabilities, functions, activities, and tasks necessary to sustain all elements of operating forces in theater at all levels of war. Within the national and theater logistic systems, it includes, but is not limited to that support rendered by service forces in ensuring the aspects of supply, maintenance, transportation, health services, and other services required by aviation and ground combat troops to permit those units to accomplish their missions in combat. Combat service support encompasses those activities at all levels of war that produce sustainment to all operating forces on the battlefield. (Source: Joint Pub 1-02)

Combat Service Support Elements

Those elements whose primary missions are to provide service support to combat forces and which are a part, or prepared to become a part, of a theater, command, or task force formed for combat operations. (Source: Joint Pub 1-02)

Combat Support Elements

Those elements whose primary missions are to provide combat support to the combat forces and which are a part, or prepared to become a part, of a theater, command, or task force formed for combat operations. (Source: Joint Pub 1-02)

Combined

Between two or more forces or agencies of two or more allies. (Source: Joint Pub 1-02)

Command

The authority that a commander in the Military Service lawfully exercises over subordinates by virtue of rank or assignment. Command includes the authority and responsibility for effectively using available resources and for planning the employment of, organizing, directing, coordinating, and controlling military forces for the accomplishment of assigned missions. It also includes responsibility for health, welfare, morale, and discipline of assigned personnel. (Source: Joint Pub 1-02)

Command and Control

The exercise of authority and direction by a properly designated commander over assigned forces in the accomplishment of his mission. Command and control functions are performed through an arrangement of personnel, equipment, communications, facilities, and procedures employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission. (Source: Joint Pub 1-02)

Common Servicing

That function performed by one military Service in support of another military Service for which reimbursement is not required from the Service receiving support. (Source: Joint Pub 1-02)

Common Supplies

Those supplies common to two or more services. (Source: Joint Pub 1-02)

Common-User Airlift Service

The airlift service provided on a common basis for all DoD agencies and, as authorized, for other agencies of the US Government. (Source: Joint Pub 1-02)

Common-User Lift

U.S. Transportation Command-controlled lift: The pool of strategic transportation assets either government owned or chartered that are under the operational control of Air Mobility Command, Military Sealift Command, or Military Traffic Management Command for the purpose of providing common-user transportation to the Department of Defense across the range of military operations. These assets range from common-user organic or chartered pool of common-user assets available day-to-day to a larger pool of common-user assets phased in from other sources. (Source: Joint Pub 1-02)

Common-User Military Land Transportation

Point-to-point land transportation service operated by a single Service for common use by two or more Services. (Source: Joint Pub 1-02)

Common-User Ocean Terminal

A military installation, part of a military installation, or a commercial facility operated under contract or arrangement by the Military Traffic Management Command which regularly provides for two or more Services' terminal functions or receipt, transit storage or staging, processing, and loading and unloading of passengers or cargo aboard ships. (source: Joint Pub 1-02)

Common-User Sealift

The sealift service provided on a common basis for all DOD agencies and, as authorized, for other agencies of the US government. Military Sealift Command provides common-user sealift for which users reimburse the DBOF-T. (Source: Joint Pub 4-01.6 as amended)

Common-User Transportation

Transportation and transportation services provided on a common basis for two or more Department of Defense agencies and, as authorized, non-DoD agencies (Source: Joint Pub 4-01)

Communications

A method or means of conveying information of any kind from one person or place to another. (Source: Joint Pub 1-02)

Communications Network

An organization of stations capable of direct communications on a common channel or frequency. (Source: Joint Pub 1-02)

Concept of Operation

A verbal or graphic statement, in broad outline, of a commander's assumptions or intent in regard to an operation or series of operations. The concept of operations frequently is embodied in campaign plans and operation plans; in the latter case, particularly when the plans cover a series of connected operations to be carried out simultaneously or in succession. The concept is designed to give an overall picture of the operation. It is included primarily for additional clarity of purpose. (Source: Joint Pub 1-02)

Container

A reusable cargo container that is assigned a permanent control number; any container (for example, crate) when packed with more than one shipment unit and assigned a one-time container control number. (Source: DoD 4500.32-R)

Container Holding/Handling Area (CoHA)

A designated location for temporarily holding (1) arriving containers until onward movement to the consignee can be arranged, (2) departing containers until strategic transportation can be arranged, or (3) where container are loaded or unloaded. Container holding/handling areas are designated by the commander of the facility, in coordination with the host nation and the Joint Movement Center. (Source: Stipulated)

Contingency

An emergency involving military forces caused by natural disasters, terrorists, subversives, or by required military operations. Due to the uncertainty of the situation, contingencies require plans, rapid response, and special procedures to ensure the safety and readiness of personnel, installations, and equipment. (Source: Joint Pub 1-02)

Contingency Operating Location (COL)

A host nation airfield, located within a contingency area of operations used to support air operations without establishing full support facilities. The base will be designated for use by the supported combatant command, in coordination with the host nation. Service components, and allied forces operating in the area. It may be used for temporary or extended operations, but will require support from a main operating base during extended operations. A Service air terminal will usually be established at the location. (Source: Stipulated)

Contingency Plan

A plan for major contingencies which can reasonably be anticipated in the principal geographic subareas of the command. (Source: Joint Pub 1-02)

Contingency Response Program (CORE)

Transportation emergency preparedness program designed to ensure that the Department of Defense receives priority commercial transportation services during defense contingencies prior to the declaration of national emergency and during mobilization. (Source: Joint Pub 4-01)

Control

Authority which may be less than full command exercised by a commander over part of the activities of subordinate or other organizations. (Source: Joint Pub 1-02)

Controlled Route

A route, the use of which is subject to traffic or movement restrictions which may be supervised. (Source: Joint Pub 1-02)

Control Point

A position along a route of march at which soldiers are stationed to give information or instructions for the regulation of supply or traffic. (Source: Joint Pub 1-02)

Convoy Assembly Area (CAA)

An area in the vicinity of a reception terminal designated by the commander of a joint reception complex, where arriving unit equipment and personnel are assembled for onward movement to intermediate or final destinations in convoys. The commander designating the location will coordinate the use of the facilities with other allied commands using the facility and the host nation. (Source: Stipulated)

Convoy Support Center (CSC)

Locations designated by the supported combatant command, in coordination with the host nation, Service components, and allied organizations, along the main supply routes that provide security, life support for drivers, fuel, limited maintenance support, and vehicle recovery. (Source: Stipulated)

Coordinating Authority

A commander or individual assigned responsibility for coordinating specific functions or activities involving forces of two or more Services or two or more forces of the same Service. The commander or individual has the authority to require consultation between the agencies involved, but does not have the authority to compel agreement. In the event that essential agreement cannot be obtained, the matter shall be referred to the appointing authority. (Source: Joint Pub 1-02)

Cross Servicing

That function performed by one Military Service in support of another Military Service for which reimbursement is required from the Service receiving support. (Source: Joint Pub 1-02)

D-Day

The unnamed day on which a particular operation commences or is to commence. (Source: Joint Pub 1-02)

Data

Representation of facts, concepts, or instructions in a formalized manner suitable for communication, interpretation, or processing by humans or by automatic means. Any representations such as characters or analog quantities to which meaning is or might be assigned. (Source: Joint Pub 1-02)

Data Base

Information that is normally structured and indexed for user access and review. Data bases may exist in the form of physical files (folders, documents, etc.) or formatted automated data processing system data files. (Source: Joint Pub 1-02)

Defense Transportation System

Consists of military controlled terminal facilities, AMC controlled aircraft, MSC controlled sealift, and government controlled air or land transportation. (Source: Joint Pub 4-01.6)

Deliberate Planning

The Joint Operations Planning and Execution System process involving the development of joint operation plans for contingencies identified in joint strategic planning documents. Conducted primarily in peacetime, deliberate planning is accomplished in prescribed cycles that complement other Department of Defense planning cycles and in accordance with the formally established Joint Strategic Planning System. (Source: Joint Pub 1-02)

Departure Airfield Control Group

The organization provided by the supported force which will control the deploying unit to be airlifted from the marshaling area until released to the TALCE at the ready line. Upon acceptance into DACG, all equipment belongs to the DACG commander until it is released to the Air Force. Functions of the DACG are the same for any service that is being airlifted. However, the Marine Corps unit is called a support loading staging group (SCG). The Air Force organization is called the mobility control center. (Source: FM 55-12)

Deployment

The relocation of forces and materiel to desired areas of operation. Deployment encompasses all activities from origin or home station through destination, specifically including intra-continental United States, intertheater, and intratheater movement legs, staging, and holding areas. (Source: Joint Pub 1-02)

Deployment Data Base

The JOPEs (Joint Operation Planning and Execution System) data base containing the necessary information on forces, materiel, and filler and replacement personnel movement requirements to support execution. The data base reflects information contained in the refined time-phased force and deployment data from the deliberate planning process or developed during the various phases of the crisis action planning process, and the movement schedules or tables developed by the transportation component commands to support the deployment of required forces, personnel and materiel. (Source: Joint Pub 1-02)

Deployment Planning

Encompasses all activities from origin or home station through destination, specifically including intra-continental United States, intertheater, and intratheater movement legs, staging areas, and holding areas. (Source: Joint Pub 1-02)

Director of Mobility Forces

The director of mobility forces (DIRMOBFOR) will normally be a senior officer who is familiar with the area of responsibility (AOR) or joint operations area (JOA) and possesses an extensive background in airlift operations. When established, the DIRMOBFOR serves as the designated agent of the Air Force Component Commander or joint force air component commander, if designated, for all airlift issues in the AOR or JOA, and for other duties as directed. The DIRMOBFOR exercises coordinating authority between the airlift coordination cell, the air mobility element, the Tanker Airlift Control Center, the joint movement center, and the air operations center in order to expedite the resolution of airlift problems. The DIRMOBFOR may be sourced from the theater's organizations, United States Transportation Command, or United States Atlantic Command. Also called DIRMOBFOR. (Source: Joint Pub 3-17)

Dispatch Route

In road traffic, a roadway over which full control, both as to priorities of use and the regulation of movement of traffic in time and space is exercised. Movement authorization is required for its use, even by a single vehicle. (Source: Joint Pub 1-02)

Displaced Person

People who have been displaced but remain within the territory of their own country. (Source: Center for Research on the Epidemiology of Disasters for the UNDHA)

Distribution System

That complex of facilities, installations, methods, and procedures designed to receive, store, maintain, distribute, and control the flow of military materiel between the point of receipt into the military system and the point of issue to using activities and units. (Source: Joint Pub 1-02)

Diversion

A rerouting of cargo or passengers to a new transshipment point or destination or on a different mode of transportation prior to arrival at ultimate destination. (Source: Joint Pub 1-02)

Doctrine

Fundamental principles by which the military forces or elements thereof guide their actions in support of national objectives. It is authoritative but requires judgment in application. (Source: Joint Pub 1-02)

Dominant User Concept

The concept that the Service which is the principal consumer will have the responsibility for performance of a support workload for all using Services. (Source: Joint Pub 1-02)

Driver Holding Area

A site in the vicinity of a water terminal designated by the commander of a Joint Water Port Complex, in coordination with the host nation, where life support is provided to drivers of deploying units while awaiting arrival of unit equipment by sealift. (Source: Stipulated)

Enemy Prisoner of War Holding Area (EPWHA)

A location in the vicinity of an air or water terminal designated by the commander of a Joint Aerial or Joint Water Port Complex where prisoners of war are secured temporarily and provided life support while awaiting transportation from a theater of operations. The commander designating the location will coordinate the use of the facilities with the host nation and the command exercising control over the prisoners. (Source: Stipulated)

Execution Planning

The phase of the crisis action planning process in which an approved operation plan or other National Command Authorities-designated course of action is adjusted, refined, and translated into an operation order. Execution planning can proceed on the basis of prior deliberate planning, or it can take place under a no plan situation. (Source: Joint Pub 1-02)

Expellee

A civilian outside the boundaries of the country of his or her nationality or ethnic origin who is being forcibly repatriated to that country or to a third country for political or other purposes. (Source: Joint Pub 1-02)

Facility

A real property entity consisting of one or more of the following: a building, a structure, a utility system, pavement, and underlying land. (Source: Joint Pub 1-02)

Fast Sealift Ships (FSS)

A fleet of eight Roll-on/Roll-off vessels, owned by the Navy and operated by the Military Sealift Command, used by the DoD to transport military materiel during exercise and contingency operations (Source: Stipulated)

Feasibility

Operation plan review criterion. The determination of whether the assigned tasks can be accomplished using available resources. (Source: Joint Pub 1-02)

Final Destination (FD)

The destination designated in the time phased force and deployment data (TPFDD) by the supported geographic combatant command where a unit will complete RSOI processing, effect transfer of authority to its gaining command, and begin to perform its assigned mission. (Source: Stipulated)

First Destination Reporting Point (FDRP)

The first highway regulating point encountered by convoys departing Joint Aerial and Water Port Complexes, and the point where tactical control (TACON) of the personnel, materiel, or units passes from the complex commander to the movement control system. (Source: Stipulated)

Fly-In-Echelon (FIE)

Airlifted forces and equipment of the MAGTF and NSE plus aircraft and personnel arriving in the flight ferry of the ACE. (Source: NWP 1-02)

Force

An aggregation of military personnel, weapons systems, vehicles, and necessary support, or combination thereof. (Source: Joint Pub 1-02)

Force Closure

1. During planning, the estimated point in time when deploying units of a specified force have arrived at the designated final destinations; completed reception, staging, onward movement, and integration processing; and are ready to conduct military operations. 2. During execution, the point in time when the commander of the deploying force declares to the supported combatant commander that his organization is ready to transfer authority and to carry out assigned tasks. (Source: Adapted from Joint Pub 1-02)

Force List

A total list of forces required by an operation plan, including assigned forces, augmentation forces and any other forces to be employed in support of the plan. (Source: Joint Pub 1-02)

Force Module (FM)

A grouping of combat, combat support, and combat service support forces, with their accompanying supplies and the required non-unit resupply and personnel necessary to sustain forces for a minimum of 30 days. The elements of force modules are linked together or are uniquely identified so that they may be extracted from or adjusted as an entity in the Joint Operation Planning and Execution System data bases to enhance flexibility and usefulness of the operation plan during a crisis. Also called FM. (Source: Joint Pub 1-02)

Force Movement Control Center (FMCC)

An FMF agency normally established in the headquarters of the deploying MAGTF's parent MEF that monitors, coordinates, controls, and adjusts as required, strategic movement of Marine forces and associated Navy forces within the joint deployment system. (Source: NWP 22-10)

Force Tracking

1. The identification of units, and their specific modes of transport during movement to an objective area (Source: Joint Pub 1-02)

2. During force deployment operations, the process of gathering and maintaining information on the location, status, and predicted movement of each element (ULN) of a unit, including its command element and separate increments of personnel, equipment, and accompanying supplies while the unit is in transit. Force Tracking also includes monitoring the elements until they are reassembled, the unit includes monitoring the elements until they are reassembled, the unit commander reestablished command, and control of the unit, and the unit becomes capable of sustaining itself, performing its assigned mission, and transfer of authority to its gaining command has been completed. If the unit is part of a force, Force Tracking continues until all the units that make up the specified force have been reassembled, the force is ready to perform its assigned mission, and transfer of authority to the designated commander is effected. (Source: Stipulated)

Forward Area

An area in proximity to combat. (Source: Joint Pub 1-02)

Forward Arming and Refueling Point

A temporary facility, organized, equipped, and deployed by an aviation commander, and normally located in the main battle area closer to the area of operation than the aviation unit's combat service area, to provide fuel and ammunition necessary for the employment of aviation maneuver units in combat. The forward arming and refueling point permits combat aircraft to rapidly refuel and rearm simultaneously. (Source: Joint Pub 1-02)

Forward Logistics Site (FLS)

An overseas location, *designated by the supported combatant command, in coordination with the host nation, Service component, and allies*, with port and airfield facilities nearby, which provides logistic support to naval forces within the theater of operations during major contingency and wartime periods. Naval forward logistic sites may be located in close proximity to main battle areas to permit forward staging of services, throughput of high priority cargo, advanced maintenance, and battle damage repair. Naval forward logistic sites are linked to in-theater naval advanced logistic support sites (ALSSs) by intratheater airlift and sealift, but may also serve as transshipment points for intertheater movement of high-priority cargo into areas of direct combat. In providing fleet logistic support, naval forward logistic site capabilities may range from very austere to near those of a naval advanced logistic support site. Also called FLS. (Source: Adapted from Joint Pub 1-02)

Frustrated Cargo

Any shipment of supplies and/or equipment which while enroute to destination is stopped prior to receipt and for which further disposition instructions must be obtained. (Source: Joint Pub 1-02)

Frustrated Cargo Holding Area (FCHA)

A designated location for temporarily holding frustrated cargo until onward movement instructions can be clarified. Frustrated cargo holding areas may be designated by the commander of the facility, in coordination with the host nation and the Joint Movement Center. (Source: Stipulated)

General Cargo

Cargo which is susceptible for loading in general, nonspecialized stowage areas; e.g., boxes, barrels, bales, crates, packages, bundles and pallets. (Source: Joint Pub. 1-02)

General Purchasing Agents

Agents who have been appointed in the principal overseas areas of operations to supervise, control, coordinate, negotiate, and develop the local procurement of supplies, services, and facilities by United States Armed Forces, in order that the most effective utilization may be made of local resources and production. (Source: Joint Pub 1-02)

Harvest Eagle

An air transportable, tent-based system of housekeeping support facilities designed to provide basic living accommodations, messing and hygiene support. Each 1100-person housekeeping set can be segmented into two 550-person self sustaining packages. Mobile aircraft arresting systems and contingency airfield lighting systems are also included. (Source: AFI 25-101)

Harvest Falcon

An air transportable system consisting of hardwall shelters, tents, equipment and vehicles designed worldwide support for personnel and aircraft under bare base conditions. Provides direct mission and housekeeping support facilities for up to 55,000 personnel and 750 aircraft at up to 15 separate beddown locations. Harvest Falcon is sized into 50 1100-person bare base housekeeping sets, 15 flightline initial sets and 25 flightline follow-on support packages and 15 industrial operations support sets. (Source: AFI 25-101)

Helicopter Assembly Area (HAA)

An area designated by the commander of a joint reception complex, in coordination with the host nation and any allied commands using the same facility, where helicopters are assembled and prepared for flight, test flown, and with crews are flown to the helicopter marshaling area. (Source: Stipulated)

Helicopter Marshaling Area (HMA)

The first location where deploying helicopters are flown from the Helicopter Assembly Area. The helicopters are refueled, armed (if required), provided limited maintenance, returned to the control of the unit commander, and prepared for tactical or administrative onward movement to subsequent destinations within the theater. This area also is the initial arrival location in the theater for self-deploying helicopters. The area is designated by the supported combatant command, in coordination with the host nation and the appropriate Service components. (Source: Stipulated)

Highway Capability

The number of vehicles (highway vehicle capability) or the number of short tons payload (highway tonnage capability) which can be moved over a highway with proper consideration of type of roadway, maintenance, hills, curves, weather, other traffic, type of vehicle employed, etc. (Source: AR 310-25)

Highway Regulation

Planning, routing, scheduling, and directing the actual use of highways by vehicles, personnel afoot (including troops, refugees, and civilians), and animals to utilize highway transportation facilities and equipment most effectively in order to meet operational requirements. This is a function of the highway traffic headquarters found in the movement control agency or center. (Source: AR 310-25)

Highway Regulation Point

Point on the highway at which the highway transport service records and reports the arrival and departure of and regulates elements of highway movement by issuing instructions for continuance of the march, detours, diversions, and schedules. (Source: AR 310-25)

Highway Traffic Control

The enforcement of the rules of the road, traffic regulations, and road discipline, including spot direction. This is a function of the provost marshal and military police. (Source: AR-310-25)

Holding Area

A designated location along the theater lines of communication established for temporarily holding and processing personnel or materiel while awaiting onward movement or retrograde transport. (Source: Stipulated)

Host Nation

A NATO nation which receives the forces and/or supplies of allied nations and/or NATO organizations to be located on, or to operate in, or to transit through its territory. (Source: Joint Pub 1-02)

Host Nation Support

Civil and/or military assistance rendered by a nation to foreign forces within its territory during peacetime, crisis or emergencies, or war based on agreements mutually concluded between nations. (Source: Joint Pub 1-02)

Information

The meaning that a human assigns to data by means of the known conventions used in their representation.. (Source: Joint Pub 1-02)

Infrastructure

A term generally applicable to all fixed and permanent installations, fabrications, or facilities for the support and control of military forces. (Source: Joint Pub 1-02)

Inland Waterway

All navigable inland waterways such as rivers, lakes, inland channels, and canals of sufficient depth to accommodate cargo traffic. (Source: FM 55-60)

Installation Transportation Officer

A qualified individual appointed on orders to serve a military installation or activity that requires commercial transportation service. He is a member of the technical staff of the commander of the activity to which assigned and serves essentially as the point of contact between the installation or activity and the representative of the movement management system. (Source: FM 55-10)

Integration

The process of effecting the transfer of authority over units and forces to a designated component or functional commander for employment in the theater of operations. (Source: Stipulated)

Intermediate Staging Base (ISB)

A group of nodes designated by a supported combatant command, in coordination with the host nation, U.S. Transportation Command, Service components, and allied commands, that supports U.S. Marine Expeditionary Forces or airborne assault forces during preparation for amphibious or airborne assault forced entry operations. (Source: Stipulated)

International Identification Code

In railway terminology, a code which identifies a military train from point of origin to final destination. The code consists of a series of figures, letters, or symbols indicating the priority, country of origin, day of departure, national identification code number and country of destination of the train. (Source: Joint Pub 1-02)

International Loading Gauge

The loading gauge upon which international railway agreements are based. A load whose dimensions fall within the limits of this gauge may move without restriction on most of the railways of Continental Western Europe. GIC is an abbreviation for "gabarit international de chargement," formerly called PPI. (Source: Joint Pub 1-02)

International Logistics

The negotiating, planning, and implementation of supporting logistics arrangements between nations, their forces, and agencies. It includes furnishing logistic support (major end items, materiel, and/or services) to, or receiving logistic support from, one or more friendly foreign governments, international organizations, or military forces, with or without reimbursement. It also includes planning and actions related to the intermeshing of a significant element, activity, or component of the military logistics systems or procedures of the United States with those of one or more foreign governments, international organizations, or military forces on a temporary or permanent basis. It includes planning and actions related to the utilization of United States logistics policies, systems, and/or procedures to meet requirements of one or more foreign governments, international organizations, or forces. (Source: Joint Pub 1-02)

International Logistic Support

The provision of military logistic support by one participating nation to one or more participating nations, either with or without reimbursement. (Source: Joint Pub 1-02)

Interoperability

(DoD, NATO) 1. The ability of systems, units or forces to provide services to and accept services from other systems, units or forces and to use the services so exchanged to enable them to operate effectively together. (DoD) 2. The condition achieved among communications-electronics equipment when information or services can be exchanged directly and satisfactorily between them and/or their users. The degree of interoperability should be defined when referring to specific cases. (Source: Joint Pub 1-02)

Interservice Support

Action by one Military Service or element thereof to provide logistic and/or administrative support to another Military Service or element thereof. Such action may be recurring or nonrecurring in character on an installation, area, or worldwide basis. (Source: Joint Pub 1-02)

Intertheater Airlift

The air movement of personnel and materiel between the continental United States (CONUS) and overseas areas, or between overseas areas, normally over long distances. (Source: AFM 11-1)

Intracoastal Sealift

Shipping used primarily for the carriage of personnel and/or cargo along a coast or into river ports to support operations within a given area. (Source: Joint Pub 1-02)

Intransit Visibility

The ability to track the identity, status, and locations of DoD unit and non-unit cargo (excluding bulk petroleum, oils, and lubricants); passengers; medical patients; and personal property from origin to the consignee or destination by the CINCs, Military Services, or Defense agencies during peace, contingencies, and war. (Source: Defense ITV Integration Plan)

Intratheater Airlift

The air movement of personnel and materiel within an area, command, or theater of operations. (Source: AFM 11-1)

Joint Aerial Port Complex (JAPC)

The group of nodes designated by the supported combatant command, in coordination with the host nation and U.S. Transportation Command, that includes a Joint Aerial Port and receives, processes, services, supports, and facilitates onward movement of personnel, materiel, and units deploying into, out of, or within a theater LOC by airlift. (Source: Stipulated)

Joint Base

For purposes of base defense operations, a joint base is a locality from which operations of two or more of the Armed Forces of the Department of Defense are projected or supported and which is manned by significant elements of two or more Services or in which significant elements of two or more Services are located. (Source: Joint Pub 1-02)

Joint Logistics

The art and science of planning and carrying out, by a joint force commander and staff, logistic operations to support the protection, movement, maneuver, firepower, and sustainment of operating forces of two or more Services of the same nation. (Source: Joint Pub 1-02)

Joint Movement Center

The center established to coordinate the employment of all means of transportation (including that provided by allies or host nations) to support the concept of operations. This coordination is accomplished through establishment of transportation policies within the assigned area of responsibility, consistent with relative urgency of need, port and terminal capabilities, transportation asset availability, and priorities set by a joint force commander. (Source: Joint Pub 1-02)

Joint Operation Planning and Execution System (JOPES)

A continuously evolving system that is being developed through the integration and enhancement of earlier planning and execution systems: Joint Operation Planning System and Joint Deployment System. It provides the foundation for conventional command and control by national- and theater-level commanders and their staffs. It is designated to satisfy their information needs in the conduct of joint planning and operations. JOPES includes joint operation planning policies, procedures and reporting structures supported by communications and automated data processing systems. JOPES is used to monitor, plan, and execute mobilization, deployment, employment, and sustainment activities associated with joint operations. (Source: Joint Pub 1-02)

Joint Planning and Execution Community (JPEC)

Those headquarters, command, and agencies involved in the training, preparation, movement, reception, employment, support, and sustainment of military forces assigned or committed to a theater of operations or objective area. It usually consists of the Joint Staff, Services, Service major commands (including the Service wholesale logistic commands), unified commands (and their certain Service component commands), subunified commands, transportation component commands, joint task forces (as applicable), Defense Logistics Agency, and other Defense agencies (e.g., Defense Intelligence Agency) as may be appropriate to a given scenario. (Source: Joint Pub 5.0)

Joint Rear Area

A specific land area within a joint force commander's area of operations designated to facilitate protection and operation of installations and forces supporting the joint force. (Source: Joint Pub 1-02)

Joint Rear Area Coordinator

The officer with responsibility for coordinating the overall security of the joint rear area in accordance with joint force commander directives and priorities in order to assist in providing a secure environment to facilitate sustainment, host-nation support, infrastructure development, and movements of the joint force. The joint rear area coordinator also coordinates intelligence support and ensures that area management is practiced with due consideration for security requirements. Also called JRAC. (Source: Joint Pub 1-02)

Joint Servicing

That function performed by a jointly staffed and financed activity in support of two or more Military Services. (Source: Joint Pub 1-02)

Joint Theater Support Command (JTSC)

A jointly staffed theater level organization, reporting to a geographic Combatant Commander, responsible for planning for and providing all theater support functions in peacetime, contingency, or wartime. These functions include engineering, transportation, medical, personnel, finance, communications, materiel management, infrastructure (facilities), and contracting. (Source: Stipulated)

Joint Water Port Complex (JWPC)

The group of nodes designated by the supported combatant command, in coordination with the host nation and U.S. Transportation Command, that includes a Joint Water Port and receives, processes, services, supports, and facilitates onward movement of personnel, materiel, and units deploying into, out of, or within a theater LOC by sealift. (Source: Stipulated)

Lead Nation

A logistics role specialization concept used during multinational force deployment and employment wherein one participating nation is designated as the lead nation to provide a specified supply or service to the forces of all other participating nations in the multinational force. (Source: Stipulated)

Liaison

That contact or intercommunication maintained between elements of military forces to ensure mutual understanding and unity of purpose and action. (Source: Joint Pub 1-02)

Life Support

The provision of food, water, shelter, and emergency medical treatment to military or civilian personnel. (Source: Stipulated)

Line Haul

In highway transportation, a type haul involving long trips over the road wherein the portion of running time is high in relation to time consumed in loading and unloading. Line hauls usually are evaluated on the basis of ton-miles forward per day. In rail transportation, this term applies to the movement or carriage of material over tracks of a carrier from one point to another, but excluding switching service. (Source: FM 55-40)

Lines of Communication

All the routes, land, water, and air, which connect an operating military force with a base of operations and along which supplies and military forces move. Also called LOC. (Source: Joint Pub 1-02)

Link

A segment of the route designated by the combatant command as part of the lines of communication. A link is defined by: (1) the two nodes it connects, (2) the mode of transport, and (3) the useable military capacity of the link. (Source: Stipulated)

Loading

The process of putting personnel, materiel, and supplies on board ships, aircraft, trains, road vehicles, or other means of conveyance. (Source: Joint Pub 1-02)

Loading Plan

All of the individually prepared documents which, taken together, present in detail all instructions for the arrangement of personnel, and the loading of equipment for one or more units or other special grouping of personnel or material moving by highway, water, rail, or air transportation. See also ocean manifest. (Source: Joint Pub 1-02)

Loading Point

A point where one aircraft can be loaded or unloaded. (Source: Joint Pub 1-02)

Loading Site

An area containing a number of loading points. (Source: Joint Pub 1-02)

Local Purchase

The function of acquiring a decentralized item of supply from sources outside the Department of Defense. (Source: Joint Pub 1-02)

Logistic Assessment

An evaluation of: a. The logistic support required to support particular military operations in a theater of operations, country, or area. b. The actual and/or potential logistics support available for the conduct of military operations either within the theater, country, or area, or located elsewhere. (Source: Joint Pub 1-02)

Logistics

The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services. (Source: Joint Pub 1-02)

Logistics Movement Coordination Center (LMCC)

LMCCs are organized from service support elements (or the supporting establishment) in the geographic proximity of the marshaling units. They are tasked by the FMCC to provide organic/commercial transportation, transportation scheduling, materials handling equipment, and all other logistics support required by parent commands during marshaling and embarkation. (Source: NWP 22-10)

Logistics Over the Shore Operations (LOTS)

The loading and unloading of ships without the benefit of fixed port facilities, in friendly or nondefended territory, and, in time of war, during phases of theater development in which there is no opposition by the enemy. (Source: Joint Pub 1-02)

Logistics Sourcing

The identification of the origin and determination of the availability of the time-phased force and deployment data non-unit logistics requirements. (Source: Joint Pub 1-02)

Long Ton (LTON)

A measure of weight equivalent to 2,240 pounds (1.016 metric tons (MT) or 1,016 kilograms). (Source: FM 55-40)

M-Day

The term used to designate the unnamed day on which full mobilization commences or is due to commence. (Source: Joint Pub 1-02)

Main Operating Base (MOB)

An airfield located within a host nation, under the control of U.S. forces, that has a mature support organization, stores of war reserve materiel, and is capable of receiving and operating augmentation aircraft, supporting organizations, and non-unit materiel during contingency or wartime operations. The base will be designated for U.S. use by the combatant command, in coordination with the host nation, appropriate Service components, and U.S. Transportation Command, and has a Service air terminal. The base may be required to provide support to designated collocated operating bases and contingency operating locations during military operations. (Source: Stipulated)

Main Supply Route

The route or routes designated within an area of operations upon which the bulk of traffic flows in support of military operations. (Source: Joint Pub 1-02)

Manifest

A detailed list of the materiel located on a ship, aircraft, railroad car, truck, or container. Manifests disclose the contents of the transporting vehicle. Manifests are prepared for personnel as well as materiel. (Source: Stipulated)

A document listing in detail the passengers or cargo carried aboard a ship or airplane. (Source: Defense ITV Integration Plan)

Marine Air-Ground Task Force (MAGTF)

A task organization of Marine forces (division, aircraft wing, and service support group) under a single command and structured to accomplish a specific mission. The MAGTF components will normally include command, aviation combat, ground combat, and combat service support elements (including Navy support elements). Three types of Marine air-ground task forces that can be organized are the Marine expeditionary unit, Marine expeditionary brigade, and Marine expeditionary force. (Source: excerpt from Joint Pub 1-02).

Maritime Prepositioned Equipment and Supplies

Unit equipment and sustaining supplies associated with a MAGTF and an NSE, which are deployed on maritime prepositioning ships. (Source: NWP 22-10)

Maritime Prepositioning Force (MPF)

A task organization of units under one commander formed for the purpose of introducing a MAGTF and its associated equipment and supplies into a secure area. The MPF is composed of a command element, MPSRON, MAGTF, and NSE. (Source: NWP 22-10)

Maritime Prepositioning Force Augmentation Operation

An MPF operation that augments an existing operation. (Source: NWP 22-10)

Maritime Prepositioning Force Independent Operation

An MPF operation that does not augment an existing operation. (Source: NWP 22-10)

Maritime Prepositioning Ships (MPS)

Civilian-crewed, Military Sealift Command-chartered ships which are organized into three squadrons and are usually forward-deployed. These ships are loaded with prepositioned equipment and 30 days of supplies to support three Marine Expeditionary Brigades. Also called MPS. (Source: Joint Pub 1-02)

Maritime Prepositioning Ship Squadron (MPSRON)

A group of civilian-owned and civilian-crewed ships chartered by Military Sealift Command loaded with prepositioned equipment and 30 days of supplies to support a MAGTF up to MEB size. (Source: NWP 22-10)

Marshaling

1. The process by which units participating in an amphibious or airborne operation group together or assemble when feasible or move to temporary camps in the vicinity of embarkation points, complete preparations for combat, or prepare for loading.
2. The activities during deployment operations that assemble and prepare administratively for onward movement arriving (a) unit personnel, equipment, and accompanying supplies; (b) non-unit related personnel; or (c) non-unit related cargo. Marshaling is the last activity in the reception process. (Source: Adapted from Joint Pub 1-02)

Marshaling Area

A designated location in the vicinity of a reception terminal or prepositioned equipment site where all arriving unit personnel, equipment, and accompanying supplies are reassembled, returned to the control of the unit commander, and are prepared for onward movement. The supported combatant command designating the location will coordinate the use of the facilities with the host nation, Service components, and other allied commands, and will provide life support to the units while in the marshaling area. (Source: Stipulated)

Marshaling Area Control Group (MACG)

The organization that operates the marshaling area and is responsible for exercising tactical control (TACON) over transiting unit personnel, equipment, and accompanying supplies. The MACG also is responsible for administratively processing unit personnel, equipment and cargo for onward movement, and providing life support to transiting personnel while in the marshaling area. (Source: Stipulated)

Measurement Ton

A measure of cubic volume of cargo, expressed in units of 40 cubic feet; also indicates cubic capacity of ship available for cargo. Measurement tons equal total cubic feet divided by 40. (1 MTON = 40 cubic feet) (Source: FM 55-65)

Medical Evacuees

Personnel who are wounded, injured, or ill and must be moved to or between medical facilities. (Source: Joint Pub 1-02)

Metric Ton

A metric measure of weight equivalent to 2,204 pounds or 1,000 kilograms. (Source: Webster's)

Military Convoy

A land or maritime convoy that is controlled and reported as a military unit. A maritime convoy can consist of any combination of merchant ships, auxiliaries or other military units. (Source: Joint Pub 1-02)

Military Load Classification

A standard system in which a route, bridge or raft is assigned class number(s) representing the load it can carry. Vehicles are also assigned number(s) indicating the minimum class of route, bridge or raft they are authorized to use. (Source: Joint Pub 1-02)

Military Platform

A side-loading platform generally at least 300 meters/1000 feet long for military trains. (Source: Joint Pub 1-02)

Military Requirement

An established need justifying the timely allocation of resources to achieve a capability to accomplish approved military objectives, missions, or tasks. (Source: Joint Pub 1-02)

Military Resources

Military and civilian personnel, facilities, equipment, and supplies under the control of a DoD component. (Source: Joint Pub 1-02)

Military Standard Requisition and Issue Procedures (MILSTRIP)

Uniform procedures, codes, formats, forms, and time standards that control the interchange of logistics information relating to requisitioning, supply advice, supply status, materiel issues and receipts, and materiel return processes. (Source: Defense ITV Integration Plan)

Military Standard Transportation and Movement Procedures (MILSTAMP)

Standard data elements, codes, formats, documents, forms, rules, methods, and procedures that DoD Components and other U.S. Government Agencies/civil authorities use in the transportation and movement of materiel to, within, and beyond the Defense Transportation System (DTS). (Source: Defense ITV Integration Plan)

Mission

The task, together with the purpose, which clearly indicates the action to be taken and the reason thereof. (Source: Joint Pub 1-02)

Mobile Navy Overseas Air Cargo Terminal (NOACT)

An expeditionary organization of USN personnel, material handling equipment and administrative support equipment and supplies which can fly in on short notice and operate an air cargo terminal in support of deployed naval forces. (Source: SACLANT Above Water Warfare Logistics)

Mobility

A quality or capability of military forces which permits them to move from place to place while retaining the ability to fulfill their primary mission. (Source: Joint Pub 1-02)

Mobilization

(DoD) 1. The act of assembling and organizing national resources to support national objectives in time of war or other emergencies. See also industrial mobilization. 2. The process by which the Armed Forces or part of them are brought to a state of readiness for war or other national emergency. This includes activating all or part of the Reserve components as well as assembling and organizing personnel, supplies, and materiel. Mobilization of the Armed Forces includes but is not limited to the following categories:

a. selective mobilization – Expansion of the active Armed Forces resulting from action by Congress and/or the President to mobilize Reserve component units, individual ready reservists, and the resources needed for their support to meet the requirements of a domestic emergency that is not the result of an enemy attack.

b. partial mobilization – Expansion of the active Armed Forces resulting from action by Congress (up to full mobilization) or by the President (not more than 1,000,000) to mobilize Ready Reserve component units, individual reservists, and the resources needed for their support to meet the requirements of a war or other national emergency involving an external threat to the national security.

c. full mobilization – Expansion of the active Armed Forces resulting from action by Congress and the President to mobilize all Reserve component units in the existing approved force structure, all individual reservists, retired military personnel, and the resources needed for their support to meet the requirements of a war or other national emergency involving an external threat to the national security.

d. total mobilization – Expansion of the active Armed Forces resulting from action by Congress and the President to organize and/or generate additional units or personnel, beyond the existing force structure, and the resources needed for their support, to meet the total requirements of a war or other national emergency involving an external threat to the national security. (Source: Joint Pub 1-02)

(NATO) 1. The act of preparing for war or other emergencies through assembling and organizing national resources. 2. The process by which the armed forces or part of them are brought to a state of readiness for war or other national emergency. This includes assembling and organizing personnel, supplies, and material for active military service.

Mode of Transport

The various modes used for a movement. For each mode, there are several means of transport. They are: a. inland surface transportation (rail, road, and inland waterway); b. sea transport (coastal and ocean); c. air transportation; and d. pipelines. (Source: Joint Pub 1-02)

Mode Operators

Organizations that operate common-user lift resources to transport military requirements between the nodes of the lines of communication. These organizations may be military or civilian, including host nation resources, or any combination thereof. They operate highway, rail, airlift, sealift, inland waterway, and intracoastal transportation resources. (Source: Stipulated)

Modularity

A force design methodology that establishes a means to provide interchangeable, expandable, and tailorable force elements. (Source: TRADOC Pam 525-5)

Movement Control

Movement control is the planning, routing, scheduling, and controlling of common-user assets, and maintaining of in-transit visibility to assist commanders and operations staffs in force tracking. It also includes reception and onward movement of personnel, equipment, and supplies over lines of communications in accordance with command directives and responsibilities. Movement control is a system involving the coordination and integration of movement information and spanning all levels of operations. (Joint Pub 4-01.3)

The planning, routing, scheduling, and control of personnel and supply movements over lines of communication; also, an organization responsible for these functions. (Source: Joint Pub 1-02)

Movement Controllers

Organizations that plan, route, schedule, procure transportation services, and control movements through the lines of communication. These organizations control the flows of supplies and military forces between the nodes of the lines of communication in accordance with the priorities established by the supported combatant commander. (Source: Stipulated)

Movement Control Team

Team designed to coordinate all movements to be made and to ensure that available transportation resources are used effectively and economically. (Source: FM 55-10)

An operations team positioned at an enroute base, which assists in the control, movement, reporting, and turnaround responsibilities of deploying tactical forces. (Source: AFM 11-1)

Movement Credit

The allocation granted to one or more vehicles in order to move over a controlled route in a fixed time according to movement instructions. (Source: Joint Pub 1-02)

Movement Directive

The basic document published by the Department of the Army or the Department of the Air Force, or jointly, which authorizes a command to take action to move a designated unit from one location to another. (Source: Joint Pub 1-02)

Movement Requirement

A stated movement mode and time-phased need for the transport of units, personnel, and/or materiel from a specified origin to a specified destination. (Source: Joint Pub 1-02)

Movement Restriction

A restriction temporarily placed on traffic into and/or out of areas to permit clearance of, or prevention of congestion. (Source: Joint Pub 1-02)

Movement Schedule

A schedule developed to monitor or track a separate entity whether it is a force requirement; cargo or personnel increment, or lift asset. The schedule reflects the assignment of specific lift resources (such as an aircraft or ship) that will be used to move the personnel and cargo included in a specific movement increment. Arrival and departure times at ports of embarkation, etc., are detailed to show a flow and workload at each location. Movement schedules are detailed enough to support plan implementation. (Source: Joint Pub 1-02)

Movement Table

A table giving detailed instructions or data for a move. When necessary it will be qualified by the words road, rail, sea, air, etc., to signify the type of movement. Normally issued as an annex to a movement order or instruction. (Source: Joint Pub 1-02)

Multi-Modal

In transport operations, a term applied to the movement of passengers and cargo by more than one method of transport. (Source: Joint Pub 1-02)

National Command Authorities

The President and the Secretary of Defense or their duly deputized alternates or successors. Commonly referred to as NCA. (Source: Joint Pub 1-02)

National Defense Reserve Fleet (NDRF)

a. Including the Ready Reserve Force, a fleet composed of ships acquired and maintained by the Maritime Administration (MARAD) for use in mobilization or emergency. b. Less the Ready Reserve Force, a fleet composed of the older dry cargo ships, tankers, troop transports, and other assets in the MARAD'S custody that are maintained at a relatively low level of readiness. They are acquired by MARAD from commercial ship operators under the provisions of the Merchant Marine Act of 1936; they are available only on mobilization or congressional declaration of an emergency. Because the ships are maintained in a state of minimum preservation, activation requires 30 to 90 days and extensive shipyard work for many. (Source: Joint Pub 1-02)

NATO Standardization Agreement

The record of an agreement among several or all the member nations to adopt like or similar military equipment, ammunition, supplies, and stores; and operational, logistic, and administrative procedures. National acceptance of a NATO allied publication issued by the Military Agency for Standardization may be recorded as a Standardization Agreement. Also called STANAG. (Source: NATO - AAP 4)

Nautical Mile

A measure of distance equal to one minute of arc on the earth's surface. The United States has adopted the international nautical mile equal to 1,852 meters or 6,076.11549 feet. (Source: Joint Pub 1-02)

Naval Advanced Logistics Support Site

An overseas location used as the primary transshipment point in the theater of operations for logistic support. A naval advanced logistic support site possesses full capabilities for storage, consolidation and transfer of supplies and for support of forward-deployed units (including replacement units) during major contingency and wartime periods. Naval advanced logistic support sites, with port and airfield facilities in close proximity, are located within the theater of operations but not near the main battle areas, and must possess the throughput capacity required to accommodate incoming and outgoing intertheater airlift and sealift. When fully activated, the navy advanced logistic support site should consist of facilities and services provided by the host nation, augmented by support personnel located in the theater of operations, or both. Also called ALSS. (Source: Joint Pub 1-02)

Naval Base

A naval base primarily for support of the forces afloat, contiguous to a port or anchorage, consisting of activities or facilities for which the Navy has operating responsibilities, together with interior lines of communication and the minimum surrounding area necessary for local security. (Normally, not greater than an area of 40 square miles.) (Source: Joint Pub 1-02)

Naval Construction Force (NCF)

The combined construction units of the Navy, including primarily the mobile construction battalions and the amphibious construction battalions. These units are part of the operating forces and represent the Navy's capability for advanced base construction. (Source: Joint Pub 1-02)

Naval Control of Shipping Officer

A naval officer appointed to form merchant convoys; control and coordinate the routing and movements of such convoys, independently sailed merchant ships, and hospital ships in and out of a port or base, subject to the directions of the operational control authority. (Source: Joint Pub 1-02)

Naval Forward Logistics Site

An overseas location, with port and airfield facilities nearby, which provides logistics support to naval forces within the theater of operations during major contingency and wartime periods. FLSs may be located in close proximity to main battle areas to permit forward staging of services, throughput of high priority cargo, advanced maintenance, and battle damage repair. FLSs are linked to in-theater naval advanced logistics support sites (ALSSs) by intratheater airlift and sealift, but may also serve as transshipment points for intertheater movement of high-priority cargo into areas of direct combat. In providing fleet logistics support, FLS capabilities may range from very austere to near those of an ALSS. Also called FLS. (Source: Joint Pub 1-02)

Navy Cargo Handling Force

The combined cargo handling units of the Navy, including primarily the Navy Cargo Handling and Port Group, the Naval Reserve Cargo Handling Training Battalion and the Naval Reserve Cargo Handling Battalions. These units are part of the operating forces and represent the Navy's capability for open ocean cargo handling. (Source: Joint Pub 1-02)

Navy Support Element (NSE)

The Maritime Prepositioning Force element that is composed of naval beach group (NBG) staff and subordinate unit personnel, a detachment of Navy cargo handling force personnel, and other Navy components, as required. It is tasked with conducting the off-load and ship-to-shore movement of maritime prepositioned equipment/supplies. (Source: Joint Pub 1-02)

NEO Holding Area (NHA)

A location in the vicinity of an air or water terminal, designated by the American Ambassador, where security and life support are provided to authorized noncombatant personnel while awaiting onward movement to final destination. (Source: Stipulated)

Net Explosive Weight (NEW)

The net weight of the explosive components of ammunition or other materiel, exclusive of the inert components of the munitions or materiel. It does not include the weight of propellant casings, projectile or bomb bodies or fins, or packaging. It does include the equivalent weight of liquid propellants. NEW is used as a basis for safety procedures that limit the quantity of explosives in a storage location or in transit and to determine safe distances from explosives in storage or in transit. The actual weight of a specific explosive material can be adjusted to an equivalent weight of HE to compute NEW for a mix of collocated explosive materials. DOD 6055.9-STD, Ammunition and Explosive Safety Standards applies. (Source: Stipulated)

Node

The infrastructure and facilities designated by the combatant command as part of the lines of communication where a movement requirement is originated, processed for onward movement, or terminated. A node is defined by (1) a geographic location, (2) one or more functions to be performed at the location, and (3) the end points of links connecting it with other nodes. (Source: Stipulated)

Node Operators

Organizations that operate the nodes of the lines of communication. These organizations may be composed of military or civilian personnel or any combination thereof. They perform the tasks at the facilities located at the node that are necessary to facilitate the flows of supplies and military forces through the LOC. (Source: Stipulated)

Nonair Transportable

That which is not transportable by air by virtue of dimension, weight, or other special characteristics or restrictions. (Source: Joint Pub 1-02)

Non-Unit-Related Cargo

All equipment and supplies requiring transportation to an area of operations other than those identified as the equipment or accompanying supplies of a specific unit (e.g., resupply, military support for allies, and support for nonmilitary programs, such as civil relief). (Source: Joint Pub 1-02)

Non-Unit-Related Personnel

All personnel requiring transportation to or from an area of operations other than those assigned to a specific unit (e.g., filler personnel; replacements; temporary duty/temporary additional duty personnel; civilians; medical evacuees; and retrograde personnel). (Source: Joint Pub 1-02)

Non-Unit-Related Personnel Activity (NRPA)

The final destination designated for personnel increment numbers (PINs) in the TPFDD for non-unit related personnel (NRP movements). (Source: Stipulated)

Offload Preparation Party (OPP)

A task organization of Navy and Marine maintenance, embarkation, and cargo handling personnel deployed to the MPSRON before or during its transit to the objective area to prepare the ship's offload systems and embarked equipment for offload. (Source: NWP 22-10)

Office of Primary Responsibility (OPR)

Any headquarters, agency, or activity having primary functional interest in, and responsibility for, a specific action, project, plan, program, or problem. (Source: AFM 11-1)

On Berth

Said of a ship when it is properly moored to a quay, wharf, jetty, pier, or buoy or when it is at anchor and available for loading or discharging passengers and cargo. (Source: Joint Pub 1-02)

Onward Movement

Interrelated activities involved with moving: (1) arriving units and their accompanying supplies from reception facilities to theater destinations, (2) arriving non-unit personnel from reception facilities to gaining commands, and (3) arriving sustaining materiel from reception facilities to final destinations. (Source: Stipulated)

Open Route

A route not subject to traffic or movement control restrictions. (Source: Joint Pub 1-02)

Operational Control

(DoD) Transferable command authority which may be exercised by commanders at any echelon at or below the level of combatant command. Operational control is inherent in Combatant Command (command authority) and is the authority to perform those functions of command over subordinate forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. Operational control should be exercised through the commanders of subordinate organizations; normally this authority is exercised through the Service component commanders. Operational control normally provides full authority to organize commands and forces and to employ those forces as the commander in operational control considers necessary to accomplish assigned missions. Operational control does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training. Also called OPCON. See also combatant command; (command authority); Combatant Commander. (NATO) The authority delegated to a commander to direct forces assigned so that the commander may accomplish specific missions or tasks which are usually limited function, time, or location; to deploy units concerned, and to retain or assign tactical control of those units. It does not include authority to assign separate employment of components of the units concerned. Neither does it, of itself, include administrative or logistic control. (Source: Joint Pub 1-02)

Operational Logistics

The science of planning and carrying out the movement and maintenance of forces. In its most comprehensive sense, those aspects of military operations which deal with: a. design and development, acquisition, storage, movement, distribution, maintenance, evacuation, and disposition of materiel; b. movement, evacuation, and hospitalization of personnel; c. acquisition or construction, maintenance, operation, and disposition of facilities; and d. acquisition or furnishing of services. (Source:

Operational Route

Land route allocated to a command for the conduct of a specific operation, derived from the corresponding basic military route network. (Source: Joint Pub 1-02)

Operational Stocks

Those stocks held to meet possible operational requirements over and above holdings/allowances. See also theater operational stocks; war reserves. (Source:

Operation Order

A directive issued by a commander to subordinate commanders for the purpose of effecting the coordinated execution of an operation. Also called OPORD. (Source: Joint Pub 1-02)

Operation Plan

Any plan, except for the Single Integrated Operation Plan, for the conduct of military operations. Plans are prepared by combatant commanders in response to requirements established by the Chairman of the Joint Chiefs of Staff and by commanders of subordinate commands in response to requirements tasked by the establishing unified commander. Operation plans (OPLANs) are prepared in either a complete format of an OPLAN or as a concept plan (CONPLAN). (Source: Joint Pub 1-02)

Order and Shipping Time

The time elapsing between the initiation of stock replenishment action for a specific activity and the receipt by that activity of the materiel resulting from such an action. Order and shipping time is applicable only to materiel within the supply system, and it is composed of the distinct elements, order time, and shipping time. (Source: Joint Pub 1-02)

Organization

Any military unit; specifically, a large command composed of two or more smaller units. (Source)

Origin

Beginning point of a deployment where unit or non-unit-related cargo or personnel are located. (Source: Joint Pub 1-02)

Outsize Cargo

Cargo that exceeds 1090" x 117" x 105"; cargo too large for C130 or C141 aircraft. (Source: TD 18-14-2)

Oversized Cargo

Cargo that exceeds the usable dimensions of a 463L pallet, 104" x 84" x 96". (Source: TD 18-14-2)

463L Pallet

Shipping pallets designed by the Air Force to conform to the configuration of US aircraft and used to expedite cargo operations. (Source: FM 55-10)

Passenger

Any individual who is being transported and is not a member of the assigned transport vehicle operating crew. (Source: Defense ITV Integration Plan)

Patient

A sick, injured, wounded, or other person requiring medical/dental care or treatment. (Source: Joint Pub 1-02)

Patient Attendant

Any person designated to provide care to a patient who is in transit. A patient attendant is usually a military and/or medical person, but may be an accompanying family member. (Source: Defense ITV Integration Plan)

Personnel Increment Number

A seven-character alphanumeric field that uniquely describes a non-unit-related personnel entry (line) in a Joint Operation Planning and Execution System time-phased force and deployment data. Also called PIN. (Source: Joint Pub 1-02)

Pipeline

In logistics, the channel of support or a specific portion thereof by means of which materiel or personnel flow from sources of procurement to their point of use. (Source: Joint Pub 1-02)

POL Transfer Point (PTP)

A location where bulk POL can be transferred between two modes. (Source: Stipulated)

Port Capacity

The estimated capacity of a port or an anchorage to clear cargo in 24 hours usually expressed in tons. (Source: Joint Pub 1-02)

Preposition

To place military units, equipment, or supplies at or near the point of planned use or at a designated location to reduce reaction time, and to ensure timely support of a specific force during initial phases of an operation. (Source: Joint Pub 1-02)

Prepositioned Equipment Site (PES)

A site designated by a geographic combatant command, in coordination with the host nation and Service component, where war reserve materiel is stored and maintained for use by the command during a contingency or exercise. This materiel is usually configured as unit sets and may be maintained by U.S. military and civilian personnel, contractors or host nation personnel. (Source: Stipulated)

Prestock Supply Point

A site designated by a combatant command, in coordination with the host nation and Service component, where stocks of essential materiel needed to replenish accompanying supplies or to sustain units during deployment and military operations are stored. (Source: Stipulated)

Prime BEEF (Base Engineer Emergency Force)

Worldwide base civil engineer forces organized to provide trained military elements used in direct combat support or emergency recovery from natural disasters. (Source: AFM 11-1)

Prime FARE (Food and Readiness)

Air Force Commissary Service military forces postured to provide subsistence support at deployment locations during wartime and contingencies. (Source: AFM 11-1)

Prime RIBS (Readiness in Base Services)

Worldwide base services forces organized and trained for wartime support. (Source: AFM 11-1)

Priority

With reference to operation plans and the tasks derived therefrom, an indication of relative importance rather than exclusive and final designation of the order of accomplishment. (Source: Joint Pub 1-02)

Prisoner of War

A detained person as defined in Articles 4 and 5 of the Geneva Convention Relative to the Treatment of Prisoners of War of August 12, 1949. In particular, one, who, while engaged in combat under orders of his or her government, is captured by the armed forces of the enemy. As such, he or she is entitled to the combatant's privilege of immunity from the municipal law of the capturing state for warlike acts which do not amount to breaches of the law of armed conflict. For example, a prisoner of war may be, but is not limited to, any person belonging to one of the following categories who has fallen into the power of the enemy: a member of the armed forces, organized militia or volunteer corps; a person who accompanies the armed forces without actually being a member thereof; a member of a merchant marine or civilian aircraft crew not qualifying for more favorable treatment; or individuals who, on the approach of the enemy, spontaneously take up arms to resist the invading forces. (Source: Joint Pub 1-02)

Prisoner of War Camp

An installation established for the internment and administration of prisoners of war. (Source: Joint Pub 1-02)

Railhead

A point on a railway where loads are transferred between trains and other means of transport, and the point where tactical control of the personnel, materiel, or units passes from the node commander to the movement control system. (Source: adapted from Joint Pub 1-02)

Railway Line Capacity

The maximum number of trains which can be moved in each direction over a specified section of track in a 24 hour period (Source: Joint Pub 1-02)

Railway Loading Ramp

A sloping platform situated at the end or beside a track and rising to the level of the floor of the rail cars or wagons. (Source: Joint Pub 1-02)

Rapid Engineer Deployable, Heavy Operational Repair Squadron, Engineer (RED HORSE)

Squadrons established to provide the Air Force with a highly mobile, self-sufficient, rapidly deployable civil engineering heavy force beddown and facility repair capability in a high threat environment. (Source: AFM 11-1)

Rapid Runway Repair

The process of using construction equipment, tools, portable equipment, expendable supplies, and temporary surfacing materials to provide a minimum operating surface through expedient repair methods. (Source: AFM 11-1)

Rate of March

The average number of miles or kilometers to be traveled in a given period of time, including all ordered halts. It is expressed in miles or kilometers in the hour. (Source: Joint Pub 1-02)

Rationalization

Any action that increases the effectiveness of allied forces through more efficient or effective use of defense resources committed to the alliance. Rationalization includes consolidation, reassignment of national priorities to higher alliance needs, standardization, specialization, mutual support or improved interoperability, and greater cooperation. Rationalization applies to both weapons/materiel resources and non-weapons military matters. (Source: Joint Pub 1-02)

Ready Reserve Force (RRF)

A force composed of ships acquired by the Maritime Administration (MARAD) with Navy funding and newer ships acquired by the MARAD for the National Defense Reserve Fleet (NDRF). Although part of the NDRF, ships of the Ready Reserve Force are maintained in a higher state of readiness and can be made available without mobilization or Congressionally declared state of emergency. Also called RRF. (Source: Joint Pub 1-02)

Reallocation Authority

The authority given to NATO commanders and normally negotiated in peacetime, to reallocate in an "emergency in war" national logistic resources controlled by the combat forces under their command, and made available by nations, in order to influence the battle logistically. (Source: Joint Pub 1-02)

Reception

The process associated with the arrival, intermodal transfer, and movement of deploying (1) unit personnel and materiel to staging areas in a theater of operations; (2) non-unit personnel to theater processing centers; and (3) sustainment materiel to temporary holding areas while awaiting onward movement. Life support is furnished by reception organizations to arriving personnel while they undergo the reception process. (Source: Stipulated)

Redeployment

The transfer of a unit, an individual, or supplies deployed in one area to another area, or to another location within the area, or to the zone of interior for the purpose of further employment. (Source: Joint Pub 1-02)

Refugee

According to international legislation, persons having a well-founded fear of persecution for reasons of race, religion, nationality, membership of a particular social group or political opinion mostly outside the country of nationality and unable to return or avail themselves of the protection of that country. Includes mass exodus of peoples for reasons of conflict and natural disasters moving outside their country of origin. (Source: Center for Research on the Epidemiology of Disasters for UNDHA)

Release Point

(DoD) A well defined point on a route at which the elements composing a column return under the authority of their respective commanders, each one of these elements continuing its movement towards its own appropriate destination. (NATO) 1. In road movements, a well-defined point on a route at which the elements composing a column return under the authority of their respective commanders, each one of these elements continuing its movement towards its own appropriate destination. 2. In air transport, a point on the ground directly above which the first paratroops or cargo item is airdropped. (Source: Joint Pub 1-02)

Required Delivery Date

A date relative to C-DAY, when a unit must arrive at its destination and complete offloading to properly support the concept of operations. Also called RDD. (Source: Joint Pub 1-02)

Reserve Components

Reserve Components of the Armed Forces of the United States are: a. the Army National Guard of the United States; b. the Army Reserve; c. the Naval Reserve; d. the Marine Corps Reserve; e. the Air National Guard of the United States; f. the Air Force Reserve; and g. the Coast Guard Reserve. (Source: Joint Pub 1-02)

Reserved Route

In road traffic, a specific route allocated exclusively to a authority or formation. (Source: Joint Pub 1-02)

Restraint of Loads

The process of binding, lashing, and wedging items into one unit or into its transporter in a manner that will insure immobility during transit. (Source: Joint Pub 1-02)

Restricted Dangerous Air Cargo

Cargo which does not belong to the highly dangerous category but which is hazardous and requires, for transport by cargo or passenger aircraft, extra precautions in packing and handling. (Source: Joint Pub 1-02)

Resupply

The act of replenishing stocks in order to maintain required levels of supply. (Source: Joint Pub 1-02)

Retrograde

Non-unit cargo and personnel evacuated from a theater of operations to the CONUS. (Source: Defense ITV Integration Plan)

Retrograde Cargo

Cargo evacuated from a theater of operations. (Source: Joint Pub 1-02)

Retrograde Personnel

Personnel evacuated from a theater of operations who may include medical patients, noncombatants and civilians. (Source: Joint Pub 1-02)

Road Capacity

The maximum traffic flow obtainable on a given roadway, using all available lanes, usually expressed in vehicles per hour or vehicles per day. (Source: Joint Pub 1-02)

Road Clearance Time

The total time a column requires to travel over and clear a section of the road. (Source: Joint Pub 1-02)

Road Net

The system of roads available within a particular locality or area. (Source: Joint Pub 1-02)

Road Space

The length of roadway allocated to, and/or actually occupied by, a column on a route, expressed in miles or kilometers. (Source: Joint Pub 1-02)

Route

The prescribed course to be traveled from a specific point of origin to a specific destination. (Source: Joint Pub 1-02)

Sea Lines of Communication (SLOC)

Sea routes, designated by U.S. Transportation Command in coordination with the providing and supported combatant commands and the host nations through which the routes pass, that connect an operating military force with a base of operations. (Source: adapted from Joint Pub 1-02)

Sea-to-Air Interface Site (SAIS)

The location at an air terminal, in close proximity to a Joint Water Port, where unit personnel and equipment and/or non-unit related cargo is transloaded from strategic sealift to theater airlift for onward movement to destinations along the theater lines of communication. The site will be designated by the supported combatant command, in coordination with the host nation and U.S. Transportation Command. (Source: Stipulated)

Service Air Terminal

An air terminal and other infrastructure that has been designated by the supported combatant command, in coordination with Service component command, the host nation and the U.S. Transportation Command, for the temporary or sustained air movement of personnel and materiel of a Service component, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Stipulated)

Service Water Terminal

A water terminal and other infrastructure that has been designated by the supported combatant command, in coordination with Service component command, the host nation and the U.S. Transportation Command, for the temporary or sustained sea movement of personnel and materiel of a Service component, and to serve as an authorized port for entrance into or departure from the country in which located. (Source: Stipulated)

Shipping Time

The time elapsing between the shipment of material by the supplying activity and receipt of material by the requiring activity. (Source: Joint Pub 1-02)

Short Ton

A measure of weight equivalent to 2,000 pounds (0.907 metric tons (MT) or 907 kilograms). (Source: FM 55-10)

Special Assignment Airlift Requirements

Airlift requirements, including JCS-directed/coordinated exercises, that require special consideration due to the number of passengers involved, weight or size of cargo, urgency of movement, sensitivity or other valid factors that preclude the use of channel airlift. (Source: Joint Pub 1-02)

Special Cargo

Cargo that requires special handling or protection, such as pyrotechnics, detonators, watches, and precision instruments. (Source: Joint Pub 1-02)

Spotting

The placing of trailers, container transporters, or railcars where required to be loaded or unloaded. (Source: FM 55-10)

Staged Crews

Aircrews specifically positioned at intermediate airfields to take over aircraft operating on air routes, thus relieving complementary crews for flying fatigue and speeding up the flow rate of the aircraft concerned. (Source: Joint Pub 1-02)

Staging

The process of assembling, temporarily holding, and organizing arriving personnel and materiel into units and preparing them for onward movement; providing life support for personnel until units become self-sustaining; and assembling, holding, and organizing arriving sustaining materiel for onward movement. (Source: Stipulated)

Staging Area

A location designated by the supported combatant command, in coordination with the host nation, Service component, and allied organizations, where units are staged. The staging area will provide necessary facilities, sustainment, and other support to enable the major combat formation to achieve readiness for combat operations. (Source: Stipulated)

Staging Area Control Group (SACG)

The organization that operates the staging area and is responsible for exercising tactical control (TACON) over units, coordinating security of the staging area, allocating real estate to units, assisting units with assembling and task organizing resources, preparing for combat operations and onward movement, and providing life support for transiting personnel. (Source: Stipulated)

Standardization

(DoD) The process by which the Department of Defense achieves the closest practicable cooperation among the Services and Defense agencies for the most efficient use of research, development, and production resources, and agrees to adopt on the broadest possible basis the use of: a. common or compatible operational, administrative, and logistic procedures; b. common or compatible technical procedures and criteria; c. common, compatible, or interchangeable supplies, components, weapons, or equipment; and d. common or compatible tactical doctrine with corresponding organizational compatibility. (Source: Joint Pub 1-02)

Standard Load

A load which had been pre-planned as to dimensions, weight and balance, and designated by a number or some classification. (Source:)

Standing Operating Procedure

A set of instructions covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness. The procedure is applicable unless ordered otherwise. Also called standard operating procedure. (Source: Joint Pub 1-02)

Strategic Airlift

The airlift capability necessary to deploy and sustain military forces worldwide in support of national strategy. (Source: Joint Pub 4-01)

Strategic Mobility

The capability to deploy and sustain military forces worldwide in support of national strategy. (Source: Joint Pub 1-02)

Strategic Sealift

The afloat prepositioning and ocean movement of military materiel in support of US and allied forces. Sealift forces include organic and commercially acquired shipping and shipping services, including chartered foreign-flag vessels. (Source: Joint Pub 1-02)

Strategic Sealift Force

Common-user sealift assets of the MSC force, including fast sealift ships and prepositioned ships on completion of their mission and release, that furnish the capability to deploy and sustain military forces. The normal peacetime force may be augmented by shipping from the Ready Reserve Fleet and National Defense Reserve Fleet and from U.S. and allied merchant fleets. (Source: AFSC Pub 1)

Supercargo

Personnel that accompany cargo onboard a ship for the purpose of performing enroute maintenance and security. (Source: Defense ITV Integration Plan)

Supervised Route

In road traffic, a roadway over which limited control is exercised by means of traffic control posts, traffic patrols, or both. Movement authorization is required for its use by a column or by any vehicle of exceptional size or weight. (Source: Joint Pub 1-02)

Supply Support Activity (SSA)

The final destination designated for cargo increment numbers (CINs) in the TPFDD representing non-unit resupply cargo (NRC) shipments. (Source: Stipulated)

Supported Commander

The commander having primary responsibility for all aspects of a task assigned in the Joint Strategic Capabilities Plan (JSCP) or other joint operation planning authority. In the context of joint operation planning, this term refers to the commander who prepares operation plans or operation orders in response to requirements of the Chairman of the Joint Chiefs of Staff. (Source: Joint Pub 1-02)

Supporting Commander

A commander who provides augmentation forces or other support to a supported commander or who develops a supporting plan. Includes the designated combatant commands and Defense agencies as appropriate. (Source: Joint Pub 1-02)

Supporting Forces

Forces stationed in, or to be deployed to, an area of operations to support the execution of an operation order. Combatant command (command authority) of supporting forces is not passed to the supported commander. (Source: Joint Pub 1-02)

Supporting Nodes

Designated locations along the lines of communication where functions supporting and facilitating deployment and sustainment of the force, or retrograde operations, are conducted. (Source: Stipulated)

Survey, Liaison, and Reconnaissance Party (SLRP)

A task organization formed from the MAGTF and NSE, which is introduced into the objective area prior to the arrival of the main body of the FIE to conduct initial reconnaissance, establish liaison with in-theater authorities, and initiate preparations for the arrival of the main body of the FIE and MPSRON. (Source: NWP 22-10)

Sustainment

The provision of personnel, logistic, and other support required to maintain and prolong operations or combat until successful accomplishment or revision of the mission or of the national objective. (Source: Joint Pub 1-02)

Tactical Assembly Area (TAA)

A location designated by the supported combatant command, in coordination with the host nation and Service component, where a combat formation will transfer authority to its gaining command and from which it can be integrated into the force and be tactically employed. During combined operations, the TAA will be coordinated with the appropriate allied command. (Source: Stipulated)

Tactical Control

Command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned. Tactical control is inherent in operational control. Tactical control may be delegated to, and exercised at any level at or below the level of combatant command. Also called TACON. (Source: Joint Pub 1-02)

Tanker Airlift Control Center

The Air Mobility Command direct reporting unit responsible for tasking and controlling operational missions for all activities involving forces supporting USTRANSCOM's global air mobility mission. The Tanker Airlift Control Center is comprised of the following functions: current operations, aerial port operations, aeromedical evacuation, flight planning, diplomatic clearances, weather, and intelligence. Also called TACC. (Source: Joint Pub 3-17)

Tanker Airlift Control Element (TALCE)

A mobile command and control organization deployed to support strategic and theater air mobility operations at fixed, en route, and deployed locations where air mobility operational support is nonexistent or insufficient. The Tanker Airlift Control Element provides on-site management of air mobility airfield operations to include command and control, communications, aerial port services, maintenance security, transportation, weather, intelligence, and other support functions as necessary. The Tanker Airlift Control Element is composed of mission support elements from various units and deploys in support of peacetime, contingency, and emergency relief operations on both a planned and "no notice" basis. Also called TALCE. (Source: Joint Pub 3-17)

Task

A job or function assigned to a subordinate unit or command by higher authority. (adapted from Joint Pub. 1-02). (Source: AFSC Pub 1)

Terminal

Either end of a carrier line (as railroad, trucking or shipping line, or airline) with classifying yards, dock and lighterage facilities, management offices, storage sheds, and freight and passenger stations. (Source: Webster's)

Terminal Operations

The reception, processing, and staging of passengers; the receipt, transit storage and marshaling of cargo; the loading and unloading of ships or aircraft; and the manifesting and forwarding of cargo and passengers to destination. (Source: Joint Pub 1-02)

Theater

The geographical area outside the continental United States for which a commander of a combatant command has been assigned responsibility. (Source: Joint Pub 1-02)

Theater Airlift

That airlift assigned to the combatant command (command authority) of a combatant commander other than USCINCTRANS, which provides air movement and delivery of personnel and equipment directly into objective areas through air landing, airdrop, extraction, or other delivery techniques; and the air logistic support of all theater forces, including those engaged in combat operations, to meet specific theater objectives and requirements. (Approved for inclusion in the next edition of Joint Pub 1-02)

Theater Lines of Communication

The links (route segments) and nodes (infrastructure and facilities) within the joint rear area of the theater of operations designated by the supported geographic combatant command, in coordination with the host nation, U.S. Transportation Command, and allied organizations to support the deployment, employment, sustainment, and redeployment of assigned forces and retrograde requirements. (Source: Stipulated)

Throughput

The average quantity of cargo and passengers that can pass through a port on a daily basis from arrival at the port to loading onto a ship or plane, or from the discharge from a ship or plane to the exit (clearance) from the port complex. Throughput is usually expressed in measurement tons, short tons, or passengers. Reception and storage limitation may affect final throughput. (Source: Joint Pub 1-02)

Time-Phased Force and Deployment Data (TPFDD)

The computer-supported data base portion of an operation plan; it contains time-phased force data, non-unit-related-cargo and personnel data, and movement data for the operation plan, including: a. In-place units. b. Units to be deployed to support the operation plan with a priority indicating the desired sequence for their arrival at the port of debarkation. c. Routing of forces to be deployed. d. Movement data associated with deploying forces. e. Estimates of non-unit-related cargo and personnel movements to be conducted concurrently with the deployment of forces. f. Estimate of transportation requirements that must be fulfilled by common-user lift resources as well as those requirements that can be fulfilled by assigned or attached transportation resources. Also called TPFDD. (Source: Joint Pub 1-02)

Time-Phased Force and Deployment Data (TPFDD) Refinement

For both global and regional operation plan development, the process consists of several discrete phases time-phased force and deployment data (TPFDD) that may be conducted sequentially or concurrently, in whole or in part. These phases are Concept, Plan Development, and Review. The Plan Development Phase consists of several subphases: Forces, Logistics, and Transportation, with shortfall identification associated with each phase. The Plan Development Phases are collectively referred to as TPFDD refinement. The normal TPFDD refinement process consists of sequentially refining forces, logistics (non-unit-related personnel and sustainment), and transportation data to develop a TPFDD file that supports a feasible and adequate overlapping of several refinement phases. The decision is made by the supported commander, unless otherwise directed by the Chairman of the Joint Chiefs of Staff. For global planning, refinement conferences are conducted by the Joint Staff in conjunction with US Transportation Command. TPFDD refinement is conducted in coordination with supported and supporting commanders, Services, the Joint Staff, and other supporting agencies. Commander in Chief, US Transportation Command, will normally host refinement conferences at the request of the Joint Staff or the supported commander. (Source: Joint Pub 1-02)

Time-Phased Force and Deployment List (TPFDL)

Appendix 1 to Annex A of the operation plan. It identifies types and/or actual units required to support the operation plan and indicates origin and ports of debarkation or ocean area. It may also be generated as a computer listing from the time-phased force and deployment data. (Source: Joint Pub 1-02)

To Accompany Troops

Items of military equipment, authorized by tables of organizational clothing, protective masks, and individual weapons. (Source: FM 55-40)

Ton-Miles

A unit of measurement expressed in terms of the movement of a specific number of short tons for a specific distance in miles. (Source: FM 55-40)

Total Asset Visibility (TAV)

The capability that permits operational and logistics managers to determine and act on timely and accurate information about the location, quantity, condition, movement, and status of Defense *forces and* materiel. It includes *units at home station and while intransit until integration has been completed*; the *materiel* assets that are in storage, in process, and intransit. (Source: Adapted from the Defense ITV Integration Plan)

Tracing

The act of requesting the location of a shipment for the purpose of expediting its movement or establishing the time of its delivery. (Source: FM 55-10)

Traffic Control Point

A place at which traffic is controlled either by military police or by mechanical means. (Source: FM 55-40)

Traffic Density

The average number of vehicles that occupy one mile or one kilometer of road space, expressed in vehicles per mile or per kilometer. (Source: Joint Pub 1-02)

Traffic Flow

The total number of vehicles passing a given point in a given time. Traffic flow is expressed as vehicles per hour. (Source: Joint Pub 1-02)

Traffic Management

The direction, control, and supervision of all functions incident to the procurement and use of freight and passenger transportation services. (Source: Joint Pub 1-02)

Trailer Transfer Point (TTP)

Locations established along the lines of communication by the joint (or combined) movement center, in coordination with the host nation, to support line haul operations. Loaded or unloaded trailers are received, segregated, assembled, and dispatched at the point in accordance with priorities established by the joint movement center. The site normally provides emergency refueling, recovery, and maintenance support. (Source: Stipulated)

Train Headway

The interval of time between two trains boarded by the same unit at the same point. (Source: Joint Pub 1-02)

Train Path

In railway terminology, the timing of a possible movement of a train along a given route. All the train paths on a given route constitute a timetable. (Source: Joint Pub 1-02)

Transfer of Authority

The formal transfer of a specified degree of command and control authority over designated forces between the national force commander and the designated military commander of an alliance. (Source: Stipulated)

Transportability

The capability of material to be moved by towing, self-propulsion, or carrier via any means, such as railways, highways, waterways, pipelines, oceans, and airways. (Source: Joint Pub 1-02)

Transport Aircraft

Aircraft designed primarily for the carriage of personnel and/or cargo. Transport aircraft may be classed according to range, as follows:

- a. Short-range. Not to exceed 1,200 nautical miles at normal cruising conditions (2,222 kilometers).
- b. Medium-range. Between 1,200 and 3,500 nautical miles at normal cruising conditions (2,222 and 6,482 kilometers).
- c. Long-range. Exceeds 3,500 nautical miles at normal cruising conditions (6,482 kilometers). See also strategic transport aircraft; tactical transport aircraft. (Source: Joint Pub 1-02)

Transportation Component Command (TCC)

The three component commands of USTRANSCOM: Air Force Air Mobility Command, Navy Military Sealift Command, and Army Military Traffic Management Command. Each transportation component command remains a major command of its parent Service and continues to organize, train, and equip its forces as specific by law. Each transportation component command also continues to perform Service-unique missions. Also called TCC. (Source: Joint Pub 1-02)

Transportation Control and Movement Document

The MILSTAMP shipment information document (DD Form 1384). It provides advance notice of shipments and the information necessary to process the shipments through the Defense Transportation System. The TCMD is the basis for preparation of air and surface manifests and for compiling logistics reports. (Source: Defense ITV Integration Plan)

Transportation Control Number

A unique 17-position alphanumeric data element assigned to control a shipment unit throughout the transportation pipeline. (Source: Defense ITV Integration Plan)

Transportation Movement Office

An office designed to coordinate all movements to be accomplished and to ensure that maximum effective and economic use is made of available resources. These movement offices are assigned to the communications zone, the field army, and the corps support brigade. (Source: FM 55-40)

Transportation Priorities

Indicators assigned to eligible traffic which establish its movement precedence. Appropriate priority systems apply to the movement of traffic by sea and air. In times of emergency, priorities may be applicable to continental United States movements by land, water, or air. (Source: Joint Pub 1-02)

Transportation System

All the land, water, and air routes and transportation assets engaged in the movement of U.S. forces and their supplies during peacetime training, conflict, or war, involving both mature and contingency theaters and at the strategic, operational, and tactical levels of war. (Source: Joint Pub 1-02)

Transshipment and Intermodal Transfer Points

Designated locations along the theater lines of communication where materiel is processed and transferred between vehicles, or personnel or materiel are unloaded from one mode of transport and loaded onto another mode of transport for onward movement. (Source: Stipulated)

Turnaround

The length of time between arriving at a point and being ready to depart from that point. It is used in this sense for the loading, unloading, re-fueling and re-arming, where appropriate, of vehicles, aircraft and ships. (Source: Joint Pub 1-02)

Turnaround Cycle

A term used in conjunction with vehicles, ships and aircraft, and comprising the following: loading time at departure point; time to and from destination; unloading and loading time at destination; unloading time at returning point; planned maintenance time, and where applicable, time awaiting facilities. (Source: Joint Pub 1-02)

Type Unit

A type of organizational entity established within the Armed Forces and uniquely identified by a five-character, alphanumeric code called a unit type code. (Source: Joint Pub 1-02)

Unified Action Armed Forces

A publication setting forth the principles, doctrines, and functions governing the activities and performance of the Armed Forces of the United States when two or more Services or elements thereof are acting together. Also called UNAAF. (Source: Joint Pub 1-02)

Unified Command

A command with a broad continuing missions under a single commander and composed of significant assigned components of two or more Military Departments, and which is established by the President, through the Secretary of Defense with the advice and assistance of the Chairman of the Joint Chiefs of Staff. Also called unified combatant command. (Source: Joint Pub 1-02)

Unit

1. Any military element whose structure is prescribed by competent authority, such as a table of organization and equipment; specifically, part of an organization. 2. An organization title of a subdivision of a group in a task force. 3. A standard or basic quantity into which an item of supply is divided, issued, or used. In this meaning, also called unit of issue. 4. With regard to reserve components of the Armed Forces, denotes a Selected Reserve unit organized, equipped and trained for mobilization to serve on active duty as a unit or to augment or be augmented by another unit. Headquarters and support functions without wartime missions are not considered units. (Source: Joint Pub 1-02)

United States Controlled Shipping

That shipping under United States flag plus those selected ships under foreign flag which are considered to be under "effective United States control," i.e., which can reasonably be expected to be made available to the United States in time of national emergency. (Source: Joint Pub 1-02)

Unit Equipment

The equipment prescribed to be in a unit's possession by an authority such as a Table of Organization and Equipment. The transportation of unit equipment is documented with a MILSTAMP unit movement transportation control number. (Source: Defense ITV Integration Plan)

Unit Identification Code

A six-character, alphanumeric code that uniquely identifies each Active, Reserve, and National Guard unit of the Armed Forces. Also called UIC. (Source: Joint Pub 1-02)

Unitized Load

A single item, or a number of items packaged, packed or arranged in a specified manner and capable of being handled as a unit. Unitization may be accomplished by placing the item or items in a container or by banding them securely together. (Source: Joint Pub 1-02)

Unit Line Number

A seven character alphanumeric field that uniquely describes a unit entry (line) in a JOPES time-phased force and deployment data. Also called ULN. (Source: Joint Pub 1-02)

Two alphanumeric characters (the fragmentation and insert codes) added to a force requirement number to identify military units for a particular operational plan (OPLAN). (Source: Defense ITV Integration Plan)

Unit Loading

The loading of troop units with their equipment and supplies in the same vessels, aircraft, or land vehicles. (Source: Joint Pub 1-02)

Unit Personnel

All personnel assigned or attached to a specific unit and requiring movement as a unit to or from a theater or area of operations. (Source: Defense ITV Integration Plan)

Vehicle Assembly Area (VAA)

An area designated by the commander of a joint reception complex, in coordination with the host nation and any allied commands using the same facility, where unit drivers and vehicles are assembled and prepared for onward movement by convoy, by rail, or theater airlift. (Source: Stipulated)

Voluntary Intermodal Sealift Agreement (VISA)

An agreement, effective 1 October 1995, between the 14 U.S. leading shipping companies and the DoD that places ships and port facilities at the disposal of the U.S. Transportation Command during a contingency. In return, the shipping companies receive guaranteed rates from the DoD during both peace and war. (Source: Army Times 4 September 1995)

Voluntary Tanker Agreement (VTA)

An agreement established by the Maritime Administration to provide U.S. commercial tanker owners and operators to voluntarily make their vessels available to satisfy the Department of Defense needs. It is designed to meet contingency or war requirements for point-to-point petroleum, oil and lubricants movements, not to deal with capacity shortages in resupply operations. (Source: Draft Joint Pub 4-01.2)

Warning Order

A preliminary notice of an order or action which is to follow. (Source: Joint Pub 1-02)

Wartime Host Nation Support (WHNS)

All civil and military assistance provided by a HN to U.S. forces located in or deploying to/through the HN in times of crisis, tension, or war. (Source:

Water Terminal

The facilities where ships' lighters, or barges are berthed or anchored and organizations conduct terminal operations supporting military forces. (Source: Stipulated)

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13. ABSTRACT (Maximum 200 words) This study proposes specific changes to joint, Service, and combined doctrine; organizational structure; and automated planning and reporting systems necessary to more effectively and efficiently conduct joint Reception, Staging, Onward Movement, and Integration (RSOI) in any combatant command's geographic area of responsibility (AOR). An analysis of existing joint, Service, and combined doctrine determined that there is very limited doctrine relating to joint RSOI processes. This study makes specific recommendations for changes to, or the creation of, new doctrine. An analysis of theater organizational structure determined that current structures for conducting RSOI and theater LOC operations are fragmented and duplicative among the Services. This study offers several options that could enhance a combatant command's ability to conduct RSOI operations. This study also examined existing and developing automated planning and reporting systems and recommends changes or modifications to these systems that could enable combatant commands to plan and conduct RSOI operations more effectively.			
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